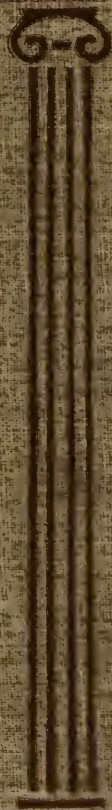
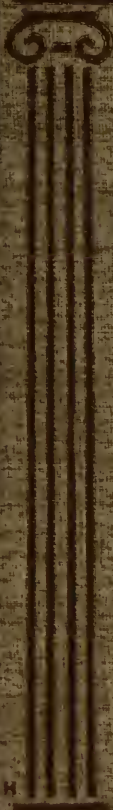


HOW TO LIVE LONGER  
AND  
WHY WE DO NOT LIVE  
LONGER

BY  
J.R. HAYES, M.D.



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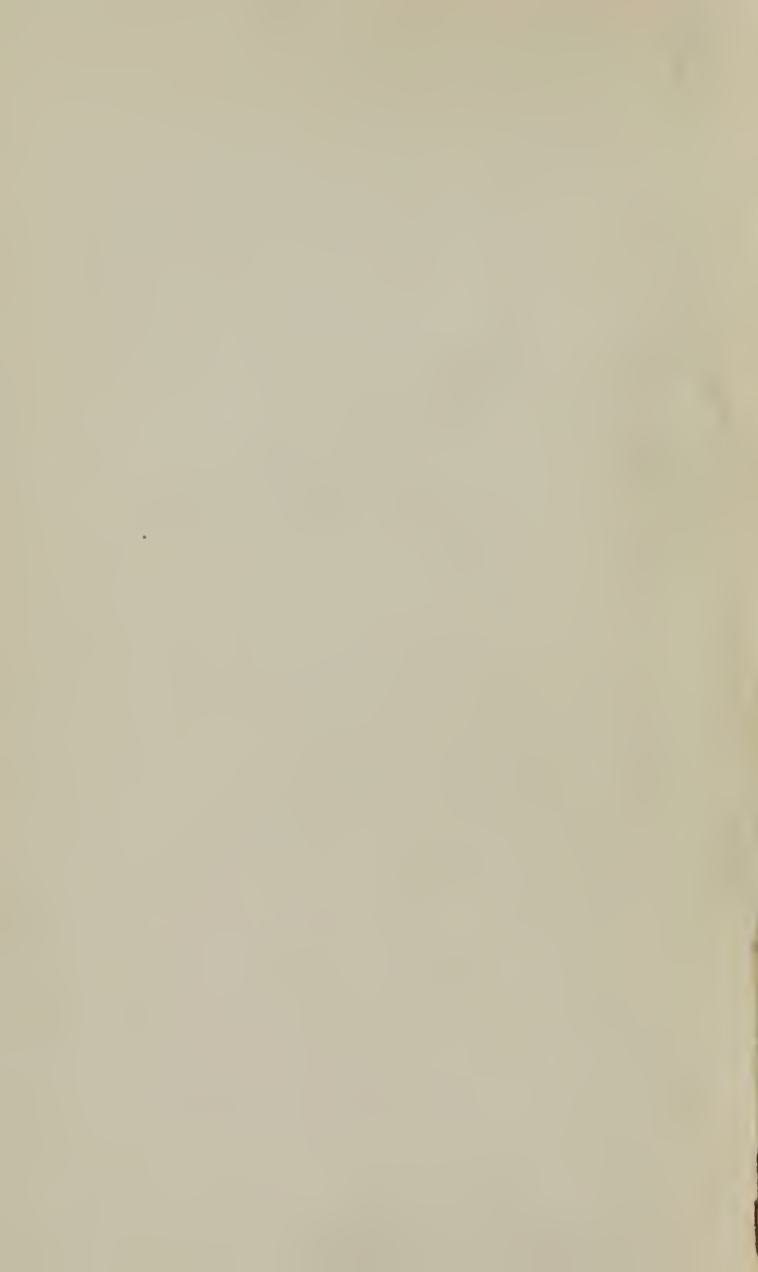
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# HOW TO LIVE LONGER

AND

## WHY WE DO NOT LIVE LONGER

BY

J. R. HAYES, M.D.

MEDICAL EXAMINER BUREAU OF PENSIONS, DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C.; LATE SURGEON UNITED STATES VOLUNTEERS; LATE MEDICAL DIRECTOR DEPARTMENT OF THE POTOMAC, G. A. R.

"Men must endure their going hence, even as their coming hither. Ripeness is all."

"Have thou moderation in all things, keep thyself from wild joy and from wailing sorrow; strive to hold thy soul in harmony and concord, like the strings of a well-tuned harp."  
—PYTHAGORAS.



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# HOW TO LIVE LONGER

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## CHAPTER I.

### INTRODUCTION.

THE eminent biologist, Bichat, formulated a rule governing the duration of mammal life, which rule seems correct and holds good with all animals except man. But the corollary to this rule will also indicate that man in his savage state is amenable to the rule, while in his civilized condition he is not, nor has he been since he emerged from barbarism.

The reason for this exception to a general rule is easily understood when we come to consider the physical man under savage and under civilized conditions of life.

The rule of Professor Bichat is to multiply by the numeral 6 the period of growth of any animal. For example, a dog grows for three years; the limit of its life is therefore eighteen or twenty years. A horse grows for four or five years; it should live to twenty-four or thirty years. A camel grows twice as slowly, and the duration of life is fifty to sixty years. The elephant attains its growth at its fifteenth

or sixteenth year; the limit of life is ninety to one hundred years. The human animal grows from sixteen to twenty years; his natural life should extend to ninety-six or to one hundred and twenty years; but less than one-third of the human race under civilized conditions attain to fifty years and only a small percentage to ninety-six years and over.

If the lower animals comply with this rule of Bichat as to duration of life, why not man? And this is the problem we have before us to solve. Two hundred years ago a German philosopher wrote as follows: "Our natural lifetime has been shortened since the advent of civilization. The invention of beverages of every imaginable description, hot and unwholesome table dishes, premature marriages, indoor life and sedentary occupations, high-pressure schools of learning, sleepless nights, and the fight, fret, worry, and dirt of our daily lives are the causes of it." There must be something in our civilization that places us low in the life scale in comparison with the duration of life of other animals; and if we wish to live out our measure of time, or desire to live longer, our intellectual capacities will have to be brought into better action for the purpose. But vital statistics, both European and American, prove that the average age of the human race in the civilized countries of the globe is increasing, and that this increase has been developed in the last fifty years. Instead of a limit of three-score and ten, the average for the minority is fully fourseore. But why the minority only?

Natural selection, which is the process of nature in sorting out the best for living, and the survival of the fittest in the animal and vegetable kingdoms, is the language we use in speaking of the natural laws that govern organic matter. The natural laws give us a fixed result. Without some other controlling force, like the mind power of man, the natural law remains supreme. We can control the physical condition of the lower animals, giving them a better and a stronger life by our interference, and change in a measure the operation of natural laws. We can do the same for ourselves by the exercise of the will power of the intellect. Can we by the physical means at our command remove the present old age period of "threescore and ten" to one hundred years and over, without material loss of physical power and enjoyment? If so, we accomplish only the restoration of the natural law governing animal life. An increasing tendency to positive individual advantage at least is shown by the statistics of the last half-century. What we have attained in this direction is due to scientific discovery and the adaptation of this knowledge to individual benefit. That all have been benefited, although in a minor degree, is evident by reason of human association and the present universal dissemination of facts discovered, when established as such. To extend our age period to one hundred years or more, and at the same time be rid of the infirmities of age, live without loss of physical power and enjoyment, and finally pass away

fully ripened, like Dr. Oliver Wendell Holmes's one-horse shay, "that fell all to pieces in one day," after the full measure of usefulness has been run, is the problem of the future to solve. To reach this acme of human life, the wear upon all the vital organs in a normally healthy organization should be easy and regular, so that the final dissolution shall come only upon the simultaneous decay of each and every function. If this Utopia of human life can be attained, death can have no sting. That it has been attained in exceptional cases in human history, even in modern times, only proves the possibility of a larger realization. The instinct of self-preservation, the first law of nature, is common to all animal life, and, like all other properties, has a meaning for its existence. So the desire of a prolonged life is universal with the human race. There is with all a desire for the realization of the poetic idea of life,—“Length of days in his right hand, and in his left riches and honor.”

In past ages this intense desire to prolong life produced remarkable results. The search for the elixir of life and health and the fountain of perpetual youth furnished the groundwork to the discovery of many of our most valued chemical laws. The avarice of man to obtain the means for the enjoyment of life led him in the pursuit of discovery of the philosopher's stone. To enjoy life, and to enjoy it as long as possible, is the universal desire.

We moderns do not dream of finding the elixirs

of life and health, or the fountains of perpetual youth, but seek the practical instead of the Utopian ideas of life, with the accrued knowledge of the ages gone by ; and, with our ever-constant and ever-increasing scientific investigations and results, we are now enabled to direct our efforts successfully to alleviate pain, to search for the causes of diseases to which humanity is heir, and compass their removal, to combat disease by aiding the physical forces of nature, and have established the principle that remedies against the cause of disease are more to be sought after than means for the cure ;—all accomplished by the general diffusion of knowledge of sanitary laws governing the general health and welfare, and thus gradually tending to the prolongation of life and the consequent enjoyment of it.

Old age ought to be reached without the attendant “infirmities of age,” as we familiarly use the expression. If one hundred years and over can be attained without infirmity, the climax is reached, because under every possible favoring condition the physical powers of man cannot as a rule exceed one hundred to one hundred and twenty years ; but if we can make our lives so perfect that at this ripe age we shall be as sound in body and mind as a man ordinarily is now at sixty years, what a forward march to the goal all wish to reach shall have been made ?

That it is attainable with a small minority is of easy solution, but the consummation as a general

rule to all is another matter. Everything that pertains to the best as relates to the physical and moral forces of man has been gained by a warfare with opposing forces, but persistent man has come out of the conflict more than conqueror, and his conquest as to long life is only circumscribed by the limit of life under the very best conditions.

The approach of old age, as we have been accustomed to see it, is indicated in the apparently healthy man by signs that tell us that some of the forces or functions of life are waning, while all the rest remain at their full vigor. As age advances we see also that the ravages of disease are repaired with less rapidity than at a younger time of life, and results of disease take possession and retard or prevent altogether a full restoration. In this way life is shortened, while a prevention of the same disease within our means would result necessarily in a longer lease of life.

To reason *a priori*, we definitely see that the discovery and adaptation of certain chemical and physiological laws, the observance of hygienic and sanitary rules, the intelligent attention to diet, in short, the application of all our knowledge as relates to a correct life, have accomplished something for the better health, longer life, and consequent happiness of the human race in the civilized countries of the globe.

These results, as we reason from cause to effect, are other than those manifested in the life of a being

plodding along to a destined end, and in listless regard of the natural laws of life, and of that other general law of "natural selection" and "survival of the fittest." The increased tenure of life as shown by the statistics of the last fifty years can be readily explained. Epidemics are not only controlled but prevented, and amelioration in the severity of general disease has resulted; distinct hygienic and sanitary laws have been formulated and proven salutary; the causes of diseases have been discovered, and with the discovery have come better and more successful modes of treatment; the death-rate percentage decreased, and the average duration of life necessarily increased. This advance, too, seems to have been made in the face of apparent drawbacks. Life to-day as we see it seems to be more exhausting in its daily demands than formerly, more intense, more hurried, more exciting, and we, apparently at least, lead faster lives than did our fathers. It may be a fact, indeed, that this increased excitement and this more rapid action of life have been factors in increasing the average of human life. Inertia, when opposed to the operation of natural laws that demand action equal to the living force of the laws themselves, means decay and death.

Dr. Humphrey, an English author, writing on the subject of longevity, sums up his conclusions as follows:

"The prime requisite is an inherited condition

for long life. The body must be wound up and sent into the world with the initial force necessary to carry on the living processes through a long period; that the several organs of the body be so adjusted to one another as to form a well-balanced whole, and that all the functions are so harmoniously performed that a cognizance even of imperfection or ailment cannot exist. Secondly, the body must be well developed, capable of much endurance and quick restoration from fatigue, the nervous system energetic, and the intellectual powers well developed. Thirdly, owing to the inherent good quality of the nutritive processes, degenerate change will be slow to manifest itself, if to this condition be added ordinary opportunities for living well under sanitary conditions, together with temperance in eating and drinking."

Dr. Humphrey's ideal man ought to live one hundred and twenty years, provided he did not attain his full growth before he was twenty years old. Reaching, however, this age of one hundred and twenty years, although so vigorous at birth and during so long a life, there comes at once the simultaneous break-down of all the functions, and, according to the prophet, man is ready to go to his long home, having accomplished the full tenure of life and reached that period when it is just as natural to die as to live.

A distinguished medical author says, "It is extremely difficult to lay down general rules for the



preservation of health or prolongation of life, because the physical being of each individual is peculiarly his own and unlike that of another. You cannot fit all men with the same suit of clothes. We cannot make the diet that agrees with one man nourishing to every man. The farmer, following his plough in the crisp spring air, comes from his work at noontide and eats a good dinner of corned beef and cabbage, and not only enjoys it, but the food he takes is easily digested and assimilated. His blood is bounding through his arteries and veins and his exertion calls for nourishment to his liking and his calling.”

In the case of the professional man or the business man of muscular inaction there is no such demand for coarse, strong food. The science of medicine of to-day—or, rather, the sciences that pertain to the profession—teach us that quality rather than quantity in the matter of diet is essential, and that the chemical nature of all food, as relates to life-sustaining elements, is a prerequisite. This knowledge also enables us to live comfortably within our specific environments and conditions,—sometimes helping us too much from an æsthetic point of view, and causing the survival of the “unfittest” by the prolongation of the lives of chronic invalids. But this very showing of what is done for the invalid, in the prolongation of life, only proves what can be done for a *sound man* by keeping him healthy and enabling him to round up the full period of human life. If

the desire of the invalid suffering from some chronic disease is to live as long as he can, the healthy man, actuated by the same desire, should equally wish to extend his years to the possible limit. Healthy men should educate themselves as to the best means of *retention* of health and its natural consequent, the prolongation of life.

Prevention of disease rather than the cure is now the aim of the pathologist. If we can prevent the incurrence of disease, a longer lease of life with the majority of the human race must result. It should not any more be an axiom, with those who desire to live out the measure of life, "that they only who are sick need a physician." It is the healthy man who needs instruction how to keep himself healthy and strong. To increase the general average of one life or many, we must know the laws of disease and health in order to ward off the one and secure the other. Whatever we have gained in the last half-century in the way of increase of the average years of human life is due to the knowledge the scientists have elaborated, and the reflex of this knowledge among intelligent people has borne fruit.

Dr. Villermé, a learned Parisian physician of this century, announced that the surest and most potent agent in the prolongation of human life is *comfortable living*. This was a terse expression of the scientist, but the term itself must be elaborated before a complete comprehension of its meaning is established. This means an open field of instruction in

detail, and the office of the practical physician and scientist should be called into requisition to enlighten the masses. This partial education of the people at large in the last fifty years has caused the recognized increase in the average of human life, and this fact, therefore, must anticipate greater results in the future. Based on well-known facts thus eliminated, some extremists, forgetting the truism that

“ Men must endure  
Their going hence even as their coming hither ;  
Ripeness is all,”

argue that the natural waste of the different organs of the human body, as they perform their various functions, can be analyzed and weighed, and that this waste can be resupplied by artificial means so exactly that a man might live interminably if he would submit to the conditions and restrictions required. The little word *if* stands in the way of consummation of this ultra-Utopian idea, and reminds us of the story of one of the ancient Chinese emperors, who spent his lifetime in brewing a compound that would make him immortal. Before it was brewed to the immortal point the emperor sickened and died. *If* he had lived he might have succeeded. There is a moral to this story in this, that we should not strive after the unattainable, but confine ourselves to the pursuit of knowledge within the range of human possibilities. To prolong life, and make the increased years also years of physical en-

joyment and happiness, is a matter of great importance to every intelligent being. It is something that money cannot buy, except so far as human means are useful in obtaining the instruction necessary to aid us in reaching certain results.

Inheritance of longevity from one or both parents is a powerful factor in estimating the probable duration of life, and one that is considered of great weight by our life-insurance companies. To-day these companies make their expectation of life rates too high, perhaps not too high when the Carlyle tables were adopted years ago, but, when we consider that in the last fifty years the duration of life has increased, it is easy to understand why our oldest life-insurance companies can build mammoth palaces, pay princely salaries, and still have a round sum in reserve for losses that do not occur so frequently as contemplated when the Carlyle tables were adopted as the guide to yearly payments.

The Bible tells us that the transgression of the law is sin. The Creator of the universe has so arranged His natural laws that they execute themselves. Human laws must have courts and officers of the law to enforce them, or they become dead letters; while the laws of nature silently but surely inflict their penalties upon all offenders, without respect to person. Obedience to these laws brings its reward and disobedience its punishment. Every law has a double action. Natural laws are unchangeable, but the effects or results of their

action depend upon the condition of the person or thing upon which they operate. Gravitation is the same when it keeps the strong building secure on its foundation as when it brings the badly-constructed one down in ruins. There is no change in any of the forces of the universe,—no change in natural law.

Obey the conservative laws of your body, and a sound and healthy constitution is your reward; disobey them, and pain, disease, and premature death bring punishment. Violate any of the laws of God and nature, and we mean by nature an effect whose cause is God, and you must pay the penalty.

Heat is the great exponent and conservator of force throughout the universe. Ages before the advent of man on this planet heat was stored away in coal, and now, by the process of combustion, this heat is released and made available for man's use. Every article of food is only so much stored heat. Man eats and consumes, combustion in the digestive organs takes place, and the products of combustion are utilized in the maintenance of the animal economy of man. Electricity in a short time will be bought and sold in measured quantities, and the human race will reap the benefit in increased comfort and enjoyment and resultant tenure of longer life. Every animal has in the original elements of its organism a definite amount of stored heat, and this can be estimated and relatively considered in measuring the duration of life, but in the majority of cases of those

of us now living our ancestors have squandered much that should have come to us, and we ourselves waste not a little that we have inherited as a birthright. We cannot now help the follies of our ancestors, but we unthinkingly waste our heritage every day of our lives. Thousands upon thousands annually die in childhood, and thousands of others survive with wasted vitality, insuring only a short life. In rearing or training children wisely or unwisely we lay the groundwork for a long or a short life. Many a premature break-down of health is due to a want of correct training in childhood. Pure air and sunshine the child needs as much as proper food and clothing, and these are stored away in the bones and tender tissues of the child, to be called upon in the shape of latent heat in adult life. Our cramming process of education is another drawback to a long life, and is a constant drain upon the stored heat that should be inherent in the constitution of the child. Even many of our so-called best schools draw too largely upon this store by the cramming process, exacting too the same tasks for all alike, and forgetting that the cramming process is simply a parrot-like exhibition for commencement day and adding nothing to the real education of the child. Youth is the opportune time to impress the importance of regular habits of living, as the habits of the adult are largely due to his early training. Hence wisely directed school discipline does much to form sound and steadily acting nervous and muscular systems,

such as give the person the power of resisting adverse influences and sustaining physical health. I am convinced that our modern improved educational facilities, especially the cultivation of gymnastics and out-door exercises, simultaneous with mind culture, have been in the last half-century a great factor in increasing the average duration of life. From the period of childhood upward, a well-knit muscular system engrafted on healthy bones has everything to do with the permanency of a healthy constitution; and it is easy to see that the groundwork for a long life is formed in childhood, and when the child reaches adult life he is prepared to enter into the battle of life fully equipped for the warfare he must encounter, with honor or dishonor to himself, and with a conservation or waste of physical force that either leads to a prolonged life or to a premature grave.

Before entering upon the subject matter, the object of which is the attempt to instruct all classes of people how to live longer and better lives, it is pertinent to our subject to say a word or two in reference to the mother's influence from a physical point of view. We have stated that longevity is dependent in a measure upon inheritance from one or both parents. The consideration of the mother's physical life cannot be altogether ignored, whether we view the subject in the abstract or consider it only from an anatomical point of view. Inherited impress from the cradle to the grave, in obedience to the

natural laws of reproduction, is recognized throughout the animal kingdom. The physical development of women, therefore, cannot escape consideration in reference to the longer life of a being whose web and woof of life are so intimately associated with hers. Man in his past history has shown himself to have been subject to many vices, but not among them was the mutilation and distortion of the person to false ideas of beauty. Fortunately for the race, this distortion of the female form carries with it little evil influence to the unborn, but the woman herself is the great sufferer from continued ill health and the consequent abridgment of her years of life, and in this way also the early years of the tender child are materially affected. If woman would consider the causes which led to this distortion of the person, she would hesitate before falling into the line of fashion that inevitably shortens her life and is productive of many ills that burden it as long as it lasts. The constricted waist of woman is a deformity artificially produced, like the cramped feet of the Chinese woman. In woman of the primitive ages there was no constricted waist, and in some of the Indian tribes there is no evidence of the slightest body contraction in this region. The normal waist of a woman, who by a natural law has broader hips than a man, is made by the expansion of the hips with the elastic walls of the abdomen, and without constriction is the natural beauty-line in woman. The constricted waist of woman, as we now see it



among all civilized nations, had its origin in Greece. At the time of the worship of the beautiful by the Greeks, it is stated by the historians of that age that the Greek women quickly saw the harmonious curves and lines of symmetry that received the approval of the critics, and they fashioned themselves accordingly. In marble and in bronze the ideals of female beauty of form and feature have been transmitted to us, but we see there nothing that reminds us of the slim waist of to-day. It is also stated by the historians that, when the Greeks began to lose their sense of beauty and degenerated in the observance of virtuous ideas and principles, the *courtesans* then began to set the fashion, and, in order to make the hips more prominent than the natural lines and curves, the graceful curve of the pelvis was gradually increased by constricting the waist with girdles. This fashion was then carried to such extremes that Hippocrates vehemently reproached the ladies of Cos for too tightly compressing their ribs and thus injuring their breathing powers. This fashion was carried to Rome, and the works of Martial and Galen frequently alluded to the unnaturally small waists of the women of their times. Galen even attributed the ailments of the women to the effect produced by the stays and breastbands in use. This habit, fashion, or custom of constricting women's waists has continued for three thousand years.

Now, the tissues of a woman do not differ materially from those of a man. The bones, muscles,

arteries, and nerves are the same, and are governed by the same laws in their growth and development. So, also, are the heart, lungs, stomach, and brain. Anything that will impair the function of an organ in one sex will operate in the same way with the other. Place a tight bandage around the waist of a man, the functions of the abdominal and thoracic organs are impaired, and he is unable to make the physical exertion that is normal to him. Woman has constricted her body for centuries, a devotee to fashion, until tight lacing has become a second nature to her. Her failure to realize her best opportunities for development, and through heritage to advance the mental and physical progress of the race, is due to this cause, and the "coming woman" must unlace herself if she wishes to come out of the toils in which the past has placed her. Women can make rapid advancement in health, strength, and physical improvement under favorable circumstances. Their bodies, however, have been held in leashes by the imperial edicts of fashion. She ought to consider the source and origin of this bondage, fastened on her three thousand years ago by her frail Grecian sisters, and learn enough to declare her independence from this unreasonable and unnatural vassalage. Many modes of restoring woman's health and strength have been introduced and popularized in the last decade, as lawn tennis, golf, croquet, the bicycle, etc.; and these outdoor exercises will in time cause the fashionable waists to disappear, and

for this reason the woman of the next century will be healthier than she has been at any time since the world was created. Then will "good digestion wait on appetite, and health on both," and the world will hail the "coming woman" with reason for the new-coming of the sex.

A French medical writer, in treating of the common neglect of means for the preservation of health and prolongation of life, states "that men do not usually die; they kill themselves." This is a truism due not so much to neglect of the means of preserving health and prolonging life as to ignorance of the daily requirements of the physical man. No sane man ever kills himself, and self-preservation is the first law of nature among sane people.

Charles Dickens took a more optimistic view of life and its ending than this piquant French author when he wrote, "Father Time, though he tarries for none, often lays his hands lightly on those who have used him well."

How to live, and how to live longer than we do now, and thus stay the hand of Father Time, is surely a subject of intense interest to every sane young man and woman, and any education upon the subject should be eagerly sought after.

Nothing is more conducive to short life than idleness or the disuse of the physical and mental faculties. It is better to die at once than rust out your life. Laziness is a disease, because it is a living torpor of body and mind. The lazy man commits

suicide without knowing it, and in the main only lives to eat, instead of eating with a view to health and a happy life before him.

Dr. Bailey, in his book, whose title is "Modern Methuselahs," and his annals of centenarians prove what he says, states: "All who have reached the one hundred years and over of life had three things in their favor: 1st, descent from a stock free from the body taint and mind defect; 2d, good digestion; 3d, both bodily and mental activity, even up to the one hundredth year." He further states that "inheritance of disease is fatal to the expectation of extreme length of days, although feebleness of constitution without disease is not." Although descent from a healthy stock is a powerful factor to one anticipating a long life, yet I cannot agree with him that inheritance of disease is necessarily fatal to a long life, as will be fully explained in its appropriate place.

Indigestion wears out the body, and is a disease, and, whether inherited or contracted, can be eliminated by the proper observance of ordinary hygienic and dietetic rules. Bodily and mental activity as the third essential to a long life is overdone by many persons, but the majority of men and women kill themselves by the indolence of both body and mind. It is a physiological fact that mental indolence is injurious to physical health. Dr. Bailey states as follows: "In the annals of the centenarians there is no more striking fact exhibited than that

the mentally deficient or the intellectually drowsy are unrepresented." Dr. Brodie, the eminent English surgeon, states: "Men have been known to die, literally speaking, of disease induced by intellectual vacuity."

Dr. Bailey also gives us the type of an aged person,—that is, one who has attained one hundred years and over. "He comes, as a rule, from a long-lived family, is of good physical constitution, all organs well balanced, good appetite and digestion, and therefore good health waiting on both, regular action of bowels, rather spare frame, but robust and energetic, with a benevolent disposition, and with no ills of any consequence through life." Such a type of man ought to live longer than one hundred years.

A young man of not the very best habits said to me not long since, "I am the healthy offspring of healthy parents, and therefore my life should be as long as theirs." I said to him, in reply, "My young friend, you must not rely too much upon this fact. If your habits of life impair your digestive organs, they, together with idleness of body and mind, the two other conditions prejudicial to a long life, will cause you to die prematurely, and long before the man who inherited disease from his parents, but who carefully observed the other conditions essential to the perpetuity of life."

Because a person inherits a disease, there is no reason why, through the means of scientific discoveries,

that disease cannot be eliminated. Consumption of the lungs, the most potent, and for ages past the most fatal of inherited diseases, can now be controlled, and such is the case with other so-called inherited diseases, or diseases that man is said to be heir to. Science has not stood still, offering no relief, as was the case fifty years ago. The art of healing is built on the science of medicine, the same as calculations, or the solving of problems, rests upon mathematics. The person who starts in life with an inherited disease has, we may say by way of comparison, no bank account to his credit, but he can make one for himself, while the one starting in life with a bank account largely to his credit may squander it, and by his methods of living never be able to restore it. Therefore, in these days of advanced scientific research and knowledge, the inheritance of disease is not the formidable obstacle to the prolongation of human life that our ancestors encountered.

In the history of the human race we find that, as a rule, the people lived longer lives when in a savage state than when civilized. This fact bears out the rule of Professor Bichat as to the duration of animal life as we see it exemplified in the lives of the lower animals, and man in his savage state should conform to the rule of six times the years of growth as the natural lifetime of an animal. But even the mental attributes of the savage led him to cultivate, as it were, the follies, excesses, and errors of civilized man, and thus made his life shorter than it should

be, according to the natural law. Yet, notwithstanding this small mental tendency exerted to his bodily injury, the savage lives longer than his civilized brother. The American Indian, previous to the introduction of "fire-water" and the diseases of civilization, lived out his one hundred years in greater numbers than the Europeans who succeeded him on this continent.

The rule of Bichat, I am convinced, conforms very closely to the natural laws of life as relates to longevity, and that means for man, as before stated, ninety-six to one hundred and twenty years of life under both natural and favoring conditions.

For many centuries past all the arts of commerce, and even the art of cooking the food we eat, have directly served to disorder the human body and shorten the duration of its existence. In fact, we can say that disease is the general rule of society, and health the exception; and hence the implied necessity of one doctor for every two or three hundred inhabitants; and where you find one healthy person you find a score or more of sick, not counting those half dead; and all conditioned upon the errors committed by the people themselves in their manner of living.

The coming century will witness a reformation of existing errors in our way of living. We see what has been done in this connection in the last years of this century, and the twentieth century will witness marvellous progressive steps in the way of securing



better health among the masses of our population, and the consequent longer life tenure. Surgery for the incident accidents of life will always be required, but doctors of medicine, except to instruct the masses professionally, will find their occupation gone before the close of the twentieth century.

In the following pages it will be my aim to point out many of the errors of living that tend to bring on disease in the human system and shorten human life. The object will be to instruct against the incurrence of diseases rather than prescribe remedies for their treatment after incurrence, inasmuch as it is an established fact that the medicinal treatment of disease borders on empiricism, and however much the science of general medicine has advanced in many of its branches in the last twenty years, that of therapeutics, or specific remedies for diseases, has made little or no progress. Starting life with the basis of a good physical constitution, with powers of digestion and suitable food for assimilation, and attention to mental and physical development, the way is open to the prolongation of life to the limit prescribed by the Creator to all animal life on this planet.

As far as practicable, in the following pages the use of all technical terms will be omitted, the object in view being to give instruction to all classes upon subjects of vital interest to all.

J. R. H.



## CHAPTER II.

### INHERITED DISEASES—DISEASES OF INFANCY NOT INHERITED—CONSUMPTION OF THE LUNGS THE SCOURGE OF THE HUMAN RACE—ITS ERADICA- TION PRACTICABLE.

IT is a fact shown by vital statistics, that from one-third to one-half of all persons born into the world die before reaching the age of five years. In fact, so great are the dangers of infancy that when a child has completed its fifth year it then has an expectation of life more than twelve times greater than it had at its birth. Many babes born into the world are weaklings from the beginning, and the inheritance or non-inheritance of this weakness cannot be shown. We are accustomed to say that at this tender age the strongest live and the weakest die, and that the survival of the fittest only is a wise provision of nature. Not all the buds of the healthiest fruit-trees bear fruit, and many do not go beyond the primary formative process. If all fish eggs were hatched, our rivers and lakes would be overrun with teeming life, and if every seed germinated and grew, our hills and valleys would show a superabundance of vegetable growth like that of the Carboniferous era. Nature is lavish as well as

prolific in production. Faulty heredity in the human species may manifest itself in the tender years of infancy, but up to the fifth year of infant life it does not seem to be a factor in the race or chance of life. The healthiest buds even succumb to the blasts that take them from the parent stem. At best, the rule of "survival of the fittest" is an arbitrary one, so much depends on circumstance, or, as the scientists term it, the "environment." The large percentage of fatality in early infancy is due to want of nourishment, clothing, shelter, and care. In short, *want*, in all its phases, rather than heredity of disease, gains the victory in very early life.

But with freedom from hereditary taint and mind defect, all other things being equal, the carefully nurtured babe has a better chance to live than one with disease inherited and attended with the same care. This ought to be a self-evident proposition. It depends somewhat, of course, upon the disease, but, as a general rule, heredity is not immutable. *It is not as strong as the renewing power of nature.* There may be in that little frame the predisposition to consumption from consumptive parents, but no germs of the disease. Wise care of the infant gives new blood and new tissues every year of its growing life, and adolescence shows a lusty youth free from all disease. What has been accomplished in the last ten years relative to the causes and prevention of disease far transcends what would have been regarded, even a quarter of a century ago, as the

wildest and most impossible speculation. In the practice of medicine, recent discoveries in bacteriology have brought about changes which almost amount to a revolution. In certain diseases, such as tuberculosis, pneumonia, erysipelas, diphtheria, all fevers, and many of the exanthematous diseases, the causative action of bacteria can no longer be doubted. The conditions necessary to the development of these diseases seem to be a susceptibility on the part of the individual and the lodgement and multiplication of special bacteria in the system. Says Dr. Austin Flint, "It is probable that a person with an inherited tendency to consumption would never develop the disease, if he could be absolutely protected against infection with tubercle bacillus; but once infected, the bacteria multiply, and produce the characteristic signs and symptoms. In other persons the bacillus tuberculosis with difficulty finds a lodgement and multiplies imperfectly. Many of the lower animals are susceptible to tuberculosis, and the disease has often been produced by direct inoculation with a pure culture of the tubercle bacillus.

"In the light of modern discoveries, consumption can *no longer be considered as an incurable disease*. The problem to solve in the treatment of diseases due to the action of bacteria is to destroy them and not the patient. It is by no means impossible that such measures will be discovered applicable to all diseases that are dependent upon the known forms of bacteria. The science of pathological treatment

is reaching out in discovery in all directions ; and looking into the future, in the light of recent discoveries, it does not seem impossible that a time will soon come when the cause of every disease will be known—when no constitutional disease will be deemed incurable and epidemics and pestilence be unknown.”

We lay more stress upon consumption of the lungs than upon any other disease, for the reason that it is unquestionably the most fatal of all diseases, cutting off the life of so many of the best, who have been, as it were, selected as the survival of the fittest, in the early life struggles for a fixed basis of existence. Whether inherited or contracted, consumption of the lungs has been, and unfortunately is yet, the greatest scourge of the human race. The following lines will represent fairly well the variation in degree of some of our most prevalent fatal diseases :

\_\_\_\_\_Consumption.  
\_\_\_\_\_Diphtheria.  
\_\_\_\_\_Typhoid fever.  
\_\_\_\_\_Scarlet fever.  
\_\_\_\_\_Measles, whooping-cough, dysentery.  
\_\_\_\_\_Small-pox.

The germ theory of disease is fully established. In the language of the political economist, “it is a theory that has come to stay.” It is a condition fully known and no longer a theory.

Consumption of the lungs is a contagious disease, and there is no reason under heaven why a purely contagious disease like tuberculosis cannot be exterminated. If we can arrest the *spread* of contagion, and we do, why not prevent it entirely? The great value of preventive measures—isolation, disinfection, and quarantine—is shown in the case of cholera, yellow fever, and ship fever. By keeping these diseases isolated and destroying the specific germs that caused them we become free from these diseases, but we would have suffered as we have done in the past if knowledge of the causes and precautions as the outcome of that knowledge had not been vigorously taken. The suppression of the bacterial germs of consumption is as easy as the stamping out of those of cholera and yellow fever. Consumption is, we may say, a tolerated disease, engaging our sympathy when we witness it so often, and dispelling all personal fear of infection, while a cholera or yellow fever invasion gives all of us the horrors. We suppress the ravages of small-pox, diphtheria, and scarlet fever by the enforcement of sanitary laws and obedience to hygienic rules, and hence the causes of these diseases in every well-governed community are decreased every year. Even with small-pox, without recourse to vaccination, by isolation and disinfection, we can arrest its spread. We should place consumption of the lungs in the catalogue of fearful and devastating diseases, the same as cholera and small-pox, and take it out of

its present fashionable place in society; and why should we not, when we see that it causes more premature deaths than small-pox, cholera, and diphtheria combined? How often among the obituary notices in our newspapers do we see lines like the following:—

Died of consumption after long suffering, which he bore with Christian resignation,

JOHN SMITH, AGED 33 YEARS.

Affliction sore long time he bore,  
Physicians were in vain, etc.

Every newspaper in the land, in village, town, and city, gives out such obituary notices, omitting the poetical effort perhaps, but nevertheless announcing that consumption was the death cause. Our people should be taught that consumption of the lungs is the monster that prematurely ends the lives of more inhabitants of the United States than any other known cause. See how common is this disease. Passing for an hour through the great thoroughfares of our chief cities, like Tremont or Washington Street in Boston, Broadway in New York City, Chestnut Street in Philadelphia, or Pennsylvania Avenue in Washington, the experienced eye can count the victims of consumption by the dozen. The sufferer is going about everywhere, attending perhaps to his daily occupation, expectorating along the sidewalks and throwing off the tubercle bacillus

by the thousands, to be carried everywhere by the dust of the streets and to inoculate some person who was born perhaps with a predisposition to consumption inherited from parents. As you meet a suffering friend, you observe the hectic flush on the cheek and the peculiar pallor of the skin, indicating the presence of the bacillus in the lung tissues. You accost your friend, "Well, John, how are you to-day?" "Oh, I am getting along finely," he replies; "I had a bad spell night before last, but my cough is getting better, and as soon as spring comes I will be all right again." Consumption is a fiend that constantly practises deception with its victims. You know this fact, perhaps, but you do not tell your friend. Thus he passes through life from year to year, growing ever weaker, and always an object of sympathy with his fellow-men, while he is the victim of a more fatal disease than the small-pox, which is chiefly a disease of the skin, and yet if one so afflicted appears on the street, even convalescent from that disease, his best friends will run away from him.

#### PRACTICAL HINTS AND SUGGESTIONS.

Let us now devote some little time to the practical side of this question, of so much vital importance to every American community, remembering that when consumption has advanced so far that both lungs are involved in the destruction of lung tissues, and when the vital forces of other organs like



the stomach and heart are impaired by sympathy with the diseased condition of the lungs, it is almost impossible to arrest the further progress of the disease to a fatal termination. It is only in the earliest or incipient stages of phthisis, when the vital forces are all in full vigor and tone, that the disease can be arrested by the destruction of the tubercle bacillus. The value of all treatment consists in the improvement of the nutritive powers of the lung tissues, in increasing their vitality and in furnishing an unsuitable soil for the development of the germs. Since Professor Koch's discovery of the tubercle bacillus, and the alleged reaction of the tuberculin, many explorers have entered the same field of discovery, to find a short way of curing or preventing consumption of the lungs by the destruction of the cause. The results of these labors will doubtless finally evolve more efficient means than we now possess with this end in view, and the day is not far distant when consumption, even in its advanced stages, may be successfully treated. At least this is the consensus of opinion among our most distinguished medical authorities. Although Professor Koch's remedy was not wholly successful in practice, yet it cannot be denied that his discovery of the tubercle bacillus placed us upon true lines as to the nature of the disease, and with this knowledge gained, other discoveries will no doubt follow in due time. From slight exposure to night air and dampness, with insufficient clothing



and perhaps with the general system not in the best condition, a person will find himself possessed of a cold which may even result in an attack of acute pneumonia, or inflammation of the lungs. Passing over the acute stage by appropriate treatment, with one predisposed to consumption, there follows what may be termed chronic pneumonia, and this again is succeeded by a condition known as incipient phthisis. This is the time to sound the alarm, for this is the only time, so far as medical knowledge now extends, when the disease can be successfully checked. If there has been consumption in the family on the side of either parent, the patient must be told that now the tubercle bacillus will find its congenial home in the tissues of his lungs, and, once lodged, they will multiply more rapidly than with a person without family predisposition. He must be told with emphasis that for this reason his fate is easily foreseen, unless every known precaution be taken to arrest the further progress of the disease. Hence, the best life insurance companies are always zealous in ascertaining the fact whether either of the parents of the applicant for insurance died from consumption.

Phthisis pulmonalis should not much longer be allowed to decimate the human race. The physicians in the land, as public educators, should more earnestly devote themselves to its eradication. But do they? They ought not to wait for the discovery of a specific to kill the bacteria or the evolution of a con-

sumption-proof race. As a rule, however, they are only disposed to take the world as they find it, with its thousands of men and women predisposed to consumption, and, when called to attend them professionally, prescribe remedies to relieve or ameliorate the symptoms as they appear from day to day. In the coming twentieth century the family physician will do something more for his consumptive patient than write a prescription to relieve the cough, give sleep, and arrest the night-sweats. He will teach the people the true nature of the disease, and assure them that the disease-germs will not grow and multiply in the lungs unless the physical condition is right for their growth and multiplication. When called to a patient suffering from incipient phthisis he will at once notify the authorities or health board of a district, the same as he now does with a case of diphtheria, small-pox, or cholera, and the same precautions will then be taken as are now taken with these contagious diseases. Isolation perhaps will not be necessary in most cases, but constant disinfection of every article used by the patient will be necessary. Consumption can never be controlled until the authorities are convinced of the necessity for precautionary measures to prevent it, the same as are now in use for other infectious diseases. Sanitariums for the special care and treatment of consumptive patients, where the diet can be controlled, exercise in the open air daily enjoined, and where pure air can be inhaled and held in the lungs, the impor-

tance of good digestion maintained as a means of improvement in the nutritive powers of the lung-tissues, and to get the physical man into such condition as not to admit disease, or in the case of consumption not to admit the multiplication of the germs, must be established and maintained. Above all, whether at home or in a sanitarium, absolute and complete disinfection is the chief thing to observe in the treatment of a consumptive patient, and any one who has inherited the predisposition should be debarred from all association with a patient having the disease. Hence for the suppression of consumption complete and perfect disinfection, with all the precautions that the word implies, is the greatest essential, without which no treatment can avail.

Dr. Stowell, in his Washington, D. C., *National Medical Review*, for January, 1896, truthfully remarks,—

“Nature’s defence against disease is the resisting power of the organism. Thus far, pure air, good food, cod-liver oil, and tonics have done more to defend us against the attacks of the tubercle bacillus than all other treatments combined. A strong system is so well supplied with phagocytes that the invading bacilli are completely overpowered. The time to make this immunity is when the bacilli first gain entrance. If they once become settled in the lung-tissue, and have begun their work of destruction, we cannot expect much aid from the leucocytes. If the people understood this better, and knew that

everybody is environed with a strong defence against disease, they would be more careful not to allow the system to remain long below par, especially if there was a family history of phthisis."

This is all true. Wholesome air, good habits, attention to hygienic laws, good digestion, and absolute disinfection will make the lung-tissue unsuitable soil for the development of the tubercle germs.

As a tonic favoring digestion and acting as an alterative, I have found that the syrup of the hypophosphites is one of the very best that can be successfully administered, to keep the system at par, in the treatment of the early stages of phthisis.

On the 23d of March, 1896, Dr. Gallinger, one of the senators from the State of New Hampshire, offered the following for the consideration of the Senate of the United States.

"In presenting petitions from Edward Everett Hale, Julia Ward Howe, the faculties of the Yale and Williams Colleges, and many distinguished public men and scientists, Mr. Gallinger, of New Hampshire, spoke in advocacy of the philanthropic plan of removing consumptives to the Rocky Mountain region, and granting the abandoned Fort Stanton Military Reservation, New Mexico, for the uses of the project. Mr. Gallinger showed the heavy mortality from pulmonary diseases, and urged that the government might well give that attention to saving human life that it gave through the Bureau of Animal Industry to overcome pleuro-pneumonia in

cattle." The prayer of the petitioners was agreed to by the Senate.

In the mountain districts of Virginia, North Carolina, Tennessee, Georgia, and certain other States there are many plateaus of mountain-land where the pure air and sunshine are as favorable for the treatment of consumption as in the Rocky Mountains, and where, with these external hygienic conditions, means of isolation and disinfection could be successfully carried out in detail for the cure.

In view of so many experiments being constantly made by scientific men, and with the knowledge of the cause of consumption and the means used to arrest the cause as our chief remedial agent, it is not unreasonable to hope that this scourge of the human race will ultimately be totally eradicated.

## CHAPTER III.

### SANITARY MARRIAGES—HOMICULTURE.

SIR GEORGE CAMPBELL, in 1886, before the British Association of Reform, made this announcement: "While great attention is bestowed upon the breeding of domesticated animals, very little is given to the important question whether it is feasible to do anything toward the improvement of our own race." He was answered by his colleagues that it is feasible to a partial extent by *arranging* marriages with reference to homiculture.

It would not be expected, however, that the principles followed on a stock-breeding farm can be carried out in human society, for it is absurd to hope for a state of things where young people in general would be willing to make their matrimonial arrangements solely with an eye to the improvement of the race. This plan of homiculture cannot be made to work in practice in these days of Christian civilization, for men and women will marry whom they please, and will never let any law of the land pick out wives and husbands for them.

But public opinion can be controlled in favor of proper mating, and even legislative measures to a limited extent may be sanctioned by public opinion.

Our present marriage customs in the main set at defiance many of the rules that should be followed in order to secure at the least that the race shall not deteriorate, but, if possible, improve life conditions, although we see that the doctrine of selection is satisfied in society marriages, or with those who move in the same society circles. The motives for marriage, as, for example, the possession of wealth, physical beauty, and moral worth, are in line with the improvement of the race. The possession of wealth often implies valuable physical, mental, and moral properties of the possessor. Beauty is the consequence of physical health and strength, while moral worth always tends to the improvement of the individual.

It has been suggested, in view of sanitary marriages, or marriages of the healthy only, that the law could step in and prevent marriage among those suffering with any serious disease. For example, at the time of issuing the licenses to marry, certificates from the family physician certifying to the health of the contracting parties should be required. This would be in line of sanitary improvement and a practice of the doctrine of horticuture. But the day, perhaps, when true sanitary marriages shall become the rule is a long way off. The need of it must be more firmly impressed upon the public mind, especially in the United States. From many people and from many strains, to use a familiar term, we have here developed a race wholly new

to the world, the American race, of type Caucasian, —still a new variety,—and transcendently American. This race of ours should be and is second to none in physical development, and that means also intellectual advancement.

We are now more than ever interested in physical culture, upon which health so much depends. Without this culture we are tacitly permitting young men and women to wed who ought not to marry each other.

Young women even more than young men need encouragement to strive to secure bodily perfection by exercise of the right kind in the open air and physical culture that brings with it healthy action of all the organs of the body. Mere beauty of face, while it attracts admiration, does not constitute true beauty, for that can only be founded upon perfect health. Young women should be thoroughly impressed with this fact. No matter how richly nature has endowed them with outward charms, they can retain them only so long as they have good health. Beauty founded on good health continues even to old age.

In these days of Christian civilization no one wishes to revive the laws of the Spartans, but we can learn valuable lessons from their laws and customs. The Spartans worshipped the beautiful and useful, and they took heroic measures to secure them. Bodily perfection was attained by enforced and well-appointed exercise. But few weaklings were known.



None sickly were allowed to marry, and all healthy persons were compelled to marry; if they refused they were punished. Bachelors after a certain age were shut out of society, and once a year were publicly denounced. Neither boys nor girls were allowed to marry until full maturity had been reached. The Spartan system of marriage, enacted for state purposes and to raise a race physically superior to their enemies, was continued for five hundred years, and during these five centuries there was produced a succession of the strongest and bravest men and the most beautiful and healthy women that this world has ever known.

In these modern days we can instruct as to the physical benefit of such laws to the human race, but we cannot enforce them, because public opinion would denounce them as brutal and barbarous in the extreme. Public opinion, however, should be made to embrace, at least in spirit, some of the features of these laws in reference to physical culture and physical health, but it is impossible, in view of our religious principles and the humanitarian ideas evolved therefrom, to enforce sanitary marriages in the absolute.

We are saints and sinners under the Christian dispensation, and in marriage, as in all things else, the human race must work out its own salvation with fear and trembling, and after our own way, suffering from mistakes and profiting by right doing, bearing the penalties of folly and reaping the re-

wards of wisdom. Science can revolutionize human nature, but cannot coerce it.

Some savage nations destroy their feeble offspring at birth, and the very old are hastened to their death. The Spartans, civilized, but pagan in belief, did not practise these cruelties, but aimed to have neither frail offspring nor decrepit old age.

The Christian civilization and the human laws enacted thereunder recognize the life and soul of a human being, and that when human life commences the immortal soul is joined with it, and it enjoins upon the parents the protection of the frail as well as the strong in body, to giving to the weakling all the means possible to enable it to enjoy this life. In the economy of the universe the life of a human being is but a span, and a thousand years are as one day, and under this view of illimitable creation we can partly understand that the babe who lives but a day of our time lives as long as the centenarian. It lives out its life, and the centenarian does no more. Our finite minds cannot understand the reason and meaning of many things in this life that we do not control, but without the belief in the soul and its immortality our religion would be a sad travesty upon human inspiration, faith, and hope. Our human laws recognize this belief, and brand him a murderer who by evil practices connives at or brings about the death of a living child even yet unborn. This belief shows us why a Christian nation cannot adopt Spartan laws for the *material* or earthly benefit

of the human race; but, with the knowledge we possess, there is nothing to prevent us from making the casket, or body, of the immortal soul by all human means as strong and healthy as it possibly can be made, to attain individual comfort while life lasts on this planet; and if the casket is healthy and strong during its life, whether long or short, the common sense of our finite minds teaches us that so much more congenial must be the immortal spirit with which it is associated through life.

## CHAPTER IV.

### MENTAL AND PHYSICAL ACTIVITY.

“Work is restful to the body. Inaction, idleness, and the constant pursuit of pleasure for the sake of pleasure is simply paralysis of life, and soon develops premature old age.”

AN English writer of prominence long ago made the assertion that the majority of men and women kill themselves by lives of indolence of body and mind. There is no question that the indolent in body and mind shorten their natural lives, and in this view of the matter we can say that they kill themselves.

It is a physiological fact that mental indolence is injurious to physical health. The mentally deficient and the professionally idle are not represented among the lists of centenarians; and, conversely, attention to mental and physical development is plainly shown to be a factor in attaining longevity. From excesses of all kinds, and especially from excess of mental and physical cultivation, let us pray for deliverance; nevertheless, it is certain that for one young man or woman whose health has suffered in this way we shall find at least half a dozen who have suffered from idleness, and from the habits of life that idleness of mind and body are always sure

to produce. There is no better security for steadiness of conduct, especially with the young, than regular work with a definite object in view. In time of trial they thus become fitted for the changes that follow in the wake of human pursuits. The mind should never be cultivated at the expense of the body at any time of our lives, and whenever we see an intellectual dwarf we see a monstrosity, a *lusus naturæ*.

“A sound mind in a sound body” means that both the physical and mental faculties have been cultivated *pari passu*, and the one should not be developed at the expense of the other if longevity be desired.

Inaction and idle habits engender indigestion and dyspepsia with all their train of attendant evils. Motion and action constitute nature’s universal normal law. Look at the toddling child and notice the number of miles it travels in a day. While awake it is ever in motion, fulfilling a natural law of its growth and development, with its infant mind just as alert for new sights and sounds.

At maturity, when the books and the plays of school and college life are thrown aside, every person, no matter what his station in life may be, should engage in some active, wholesome, and congenial employment that will call into play the best powers of mind and body. Extract all that is possible out of each day of life in healthy occupation and exercise of body and mind, and your life will necessarily be prolonged and free from disease, if, at the same time, all

excesses of life are carefully avoided. But healthy excitement, or excitement within the bounds of reason and common sense, does not abridge human life. The excitement of out-door games, the gymnasium, boating and horseback-riding, etc., are all healthy pastimes when followed without excess of bodily action that may cause temporary enervation of muscle, nerve, and digestive power. The disuse of the arms has a bearing on the general health of both men and women, since it is shown that the development of the muscles of the arms increases the capacity of the chest, and with it a corresponding increase in the tissues of the lungs and a greater area given for the oxidation of the blood, so essential to perfect health. The development of the muscles of the arms and chest by the use of dumbbells, pulley weights, Indian clubs, and gymnastic exercises is easily attained. Sufficient exercise of the arms is not realized by our ordinary occupations, and hence the necessity for the use of artificial means. It is a fact that nervous irritability, and insomnia even, can be cured by the exercise of the muscles of the arms, chest, and shoulders, followed by vigorous rubbing with coarse towels after the exercise. A sound body can stand much exposure and undue excitement without danger to any vital organ if exercise in the open air is indulged in. As a class of people the soldiers of any country, although exposed to many trials and privations, are as long-lived as many of the other classes, because of the con-

stant exercise in the fresh air incident to the profession of arms. Exercise in the open air and muscular movements of the body eliminate the waste material, and the more pure air you take into the lungs the more perfect is your digestion.

In taking exercise of any kind to strengthen the muscles of the arms, shoulders, and chest, commence moderately at first, with only the lightest of weights, in the open air, or if in a room, with the doors and windows open. This kind of exercise should preferably be taken in the morning before breakfast, but should not be indulged in after a full meal. When you begin, go at it easily and gently. One cannot make himself a Samson in a day, a week, or a month. By all means cease the exercises before you become tired. At first only exercise for fifteen minutes, then the bath or rubbing with wet towels. You are then ready for your breakfast and daily occupation. If you have any suspicion of heart-trouble, the same exercises will strengthen the great heart-muscle as well as the muscles of the body.

Physical exercise controls the nervous system and even the temperament of a person. According to the regularity of the nervous system so are the moods. If both are kept in a normal condition we are happy. When the nerves are unstrung from any cause we are apt to become irritable and ill-tempered, and we imagine that everything is going wrong, especially if the nervous irritability is joined with impairment of the digestive powers. With proper

physical exercise and correct diet it is impossible for indigestion to get the upper hand. Develop the muscular system by proper means, and it is as plain as that night follows the day that your nerve power will be increased in the same ratio. Is it not worth the small effort on the part of any one? All studious persons, in constant exercise of the intellect, especially of the reflective faculties, should not fail to exercise the muscles of the arms, shoulders, and chest daily. Walking at least two miles a day, riding on horseback, dancing, swinging on the hand-ladder, bowling, tennis, ball and croquet playing, sawing and planing wood, are examples of appropriate exercises. Rotary motions with both arms extended, making the hands describe a circle, striking the hands together behind the back, or making the attempt to do so, are excellent exercises when the person is inclined to be stooped or round-shouldered. Writing, sitting, standing, or any labor or amusement with the trunk of the body bent forward, as is the practice of many in bicycle-riding, is hurtful, because the muscles of the back are over-stretched, the lungs are compressed, and the stomach, bowels, and abdominal vessels are pushed downward and backward.

*Bend or lean the body on the hip-joints in all occupations and exercises, and the trunk will always keep its straight position.*

From the age of forty-five to ninety or one hundred years, if a person be not invalided during that



time and confined to one place, walking two or three miles a day, or the "daily constitutional," is a remarkable conservator of health and vigor. In fact, when we accustom ourselves to this daily walk in all weathers, and even at night when the daytime cannot be thus employed, we feel like animals in confinement whenever this daily habit is interrupted from any cause. Of course if one has employment that requires alternate walking and sitting during the day, the healthy requirement of nature to use the muscles by daily walking is fulfilled.

## CHAPTER V.

### THE STOMACH AND OTHER DIGESTIVE ORGANS.

“ From hour to hour we ripe and ripe, from hour to hour we rot and rot, and thereby hangs a tale.”

“ Let good digestion wait on appetite, and health on both.”

SHAKESPEARE.

WE eat food of some kind every day and at stated intervals to sustain life and repair the loss of matter that must pass off the human body day after day as long as life lasts. If this waste or death of matter so essential to the health of the individual is not thrown off daily by the appropriate organs of the body, organic derangements and ill health will result, and this is the tale our immortal poet speaks of,—a narrative that comes vividly home to the individual who suffers from bodily diseases, especially those due to the impairment of the digestive organs.

The chief organ of digestion is, of course, the stomach. What the sun is to the solar system so is the stomach to the human body. The stomach and digestive organs never sleep in the sense that the brain and the muscular and nervous systems of man are at rest for a given period in the twenty-four hours. The stomach often needs a respite from food, but we seldom, unless in case of sick-

ness, give it a rest. In health our customs call for a meal three or four times daily. We take an occasional vacation of a day or a week, but the stomach is never allowed to take a "day off" unless we are so sick that we cannot eat. The longest lives we find among those who were abstemious in eating or among those blessed only with comfortable living.

What a wonderful organ is the stomach to any animal, and especially to man! It seems sometimes that Nature knew that man would abuse his stomach, and she gave him one similar in construction to that of the hog, and in case of indigestion man is compelled to borrow from the hog's store of pepsin in order to relieve it. The hog will often quit eating and swilling when he has enough, but man oftentimes does not take pattern after the animal in this respect. A distinguished lady in Pennsylvania unfortunately mated with a dissipated and gluttony husband was accustomed to give the butcher boy a dime for bringing home from market pork chops and sausage. The same boy sometimes brought home the husband in a dilapidated condition from the streets of the town, and she gave him twenty-five cents for his trouble, remarking at the time that it was worth the extra money to bring home the whole hog.

We consume a considerable portion of our lifetime in eating, and we eat because every moment of life we are changing. Not one of us is the same to-day as yesterday. Hence the truth of the ex-

pression, from hour to hour we ripe and from hour to hour we rot.

The stomach is surrounded with numerous vessels, and all food that is dissolved and passes from the stomach to these vessels easily is said to be digestible. Food taken into the stomach that cannot be made soluble so as to enter these blood-vessels is classified as indigestible, and is the cause in time of dyspepsia, and of diarrhœa and constipation alternately.

The stomach is more intimately associated with the brain and nervous system than most people imagine. Disagreeable impressions upon the mind, upon the sight or sense of smell, or the idea even of something disgusting, makes us, as we say, "sick at the stomach." The rule works the other way also. Whatever disagreeably affects the stomach affects the mind, and the results are gloomy thoughts, the blues and forebodings of evil, culminating at last in nervous depression and prostration.

As a rule, the human family in civilized life with ample means for more than comfortable living eat too much. The sense of hunger is not always a sure sign that food is needed. The nerves of the stomach can become vitiated, and a false desire is created for food. Then follows indigestion, the silent monitor calling upon us to rest the stomach. Fast eating and want of proper mastication through bad teeth will cause the symptoms of indigestion with the most healthy and with ordinarily the very

best digestive powers. A sense of weight and uneasiness in the stomach region is experienced, which is soon dissipated by a little fasting or the missing of a meal.

Badly cooked meals are great factors in causing indigestion. The farming community ought to be the healthiest people in the world, but, as a rule, they are negligent of the means of health which are so abundantly at their disposal. With ample facilities for enjoying the very best diet they generally take the worst. Greasy compounds of all kinds, fine flour made into hot bread and biscuit, stale, salted meats, lard, cheese, and butter are staple articles of diet, while their fruits and vegetables are sent to market, or, if used at home, are saturated with sugar, butter, vinegar, salt, and pepper to render them indigestible. For these reasons, while agriculture is considered the most healthy occupation known, the average of farmers' lives is lower in the scale of longevity than that of mechanics and tradesmen. Although a farmer's life is associated with good air, out-door exercise, and regular habits in the main, these great advantages are counterbalanced by bad food and bad cooking. In this country we live both better and worse than any other people in civilized countries. Better because our country is not only the granary but the storehouse of the world, and nowhere is food so abundant and cheap as with us. From this abundance we get into the habit of lavish use, and it is often said that

a European family could live on what an American family throws away. The healthy American for his breakfast takes freely of fish, eggs, and meat, with plenty of butter and hot cakes and sweetmeats, perhaps, to finish with, all washed down by copious draughts of coffee, tea, and milk. If he would stop his eating for the day after this hearty breakfast, which is not so much out of the way of health, he would conserve his health and ward off disease. But he is accustomed to his luncheon with food just as solid and plenty of it, then a few hours after a dinner of courses. Thus we eat too much and too often of highly concentrated articles of food, and the consequence is that before we are aware of it our digestive organs become overworked and impaired, the liver and bile secretions are unduly stimulated, the action of the heart is disturbed by sympathy, and dyspepsia, headache, vertigo, and rheumatism are induced. If a man uses up his brain-tissues faster than they are repaired by appropriate food, he soon becomes nervous and irritable. If he engorges his digestive organs, and not enough food is assimilated to repair the wastes of the body, he will soon begin to show debility of both mind and body. It is recorded that St. Anthony lived to the age of one hundred and five years on bread and water alone. But he was a hermit, and gradually accustomed his very sound bodily organs to his mode of life. What he lost in activity was counterbalanced by his frugal diet, and an equilibrium was

maintained throughout his long life. If, as a recluse, he had fed himself with the food an active man requires, his hermitic life would not have reached fifty years. Every man's diet in a measure should be governed by his occupation and his temperament. There is always a happy mean between enough and gluttony, and a long life awaits a person who makes a study of his own dietetic wants, and who never transcends the common-sense rules of comfortable living. In order to be healthy and vigorous, two great factors tending to longevity, a person must eat good and sufficient food and be able to digest it well, and from the products of good digestion to make bone, muscle, and brain. Our stomachs are our best friends and our strongest allies in health and sickness, and are faithful servants to us to the end of life, but we should not overwork or abuse these faithful organs.

What is essential to the proper digestion of food? The gastric juice of the stomach, of course, preceded by proper mastication by the teeth and gums and saliva of the mouth. But the gastric juice is really our elixir of life, which enables the food we eat to be changed into blood and thence into whatever the different organs of the body require. In the matter of perfect digestion the hog excels all other animals. He can eat, digest, and grow upon anything and everything, and "all is grist that comes to his mill." He is never troubled with indigestion. The practical chemists of the day extract from the

digestive organs of the hog the pepsin, the active principle of this powerful digestion, and man becomes indebted to the hog for the means of temporary relief when through imprudence in eating and drinking he suffers from indigestion. Pepsin is, in fact, a crutch only for the dyspeptic. When pepsin is fresh, and administered by the family physician under conditions in which it is possible for it to act as a relief in digesting certain articles of food, it is found to be an invaluable remedy; but, at its best, this artificial aid only acts upon the stomach, and this organ, as we know, is but a fractional part of the whole digestive tract. It is only when the *general bodily health is good* that pepsin acts like a charm, and tides over temporary inconvenience that time and temporary abstinence from food would better accomplish. By leaning too much on the support of pepsin the debilitated stomach gets weaker, and in this case the syllogism of Baron Liebig is plainly apparent,—viz., “Nature refuses to be made the handmaid of chemistry.”

A firm of manufacturing chemists have recently placed on the market a digestive ferment that is highly accredited with the medical profession throughout the United States, and it has merits over the ordinary pepsin of the manufacturing chemist in this, that in addition to the active principles from the stomach of the animal like the hog,—and this organ, as we have just stated, is but a fractional part of the digestive tract,—these chemists state “that they



incorporate all the active and inactive ferment principles contained in the glandular secretions of all the digestive agents necessary for complete digestion." This would imply the incorporation of the salivary glands, those of the pancreas and the hepatic and splenic glands, and those of Brunner and Lieberkühn, with the pepsin of the stomach of the animal. If there is virtue in the use of pepsin alone, greater results should be derived from this combination of all the glands concerned in digestion, and I can certify to its efficiency both by personal use and by prescription tests to many patients in the past two years. But our readers must not forget that these aids to digestion are only crutches, to be used temporarily when the general health is good, or when the digestion is incidentally impaired.

If by neglect of the ordinary rules of comfortable living and sensible diet the coats of the human stomach have become so enervated that chronic dyspepsia is firmly established as a disease, all these adjuncts to aid digestion will avail little, and their use only promises temporary relief. Your wise, experienced, and intelligent family physician is your only anchor of hope to correct a deep-seated injury to and general enervation of your digestive organs from causes that he alone will understand, and you must trust to his experience to guide you to a better general health. A dyspeptic or any one with enervated digestive organs should never be his own physician.

Like a lawyer who attends to his own case in court, he has often a fool for a client.

Indigestion is something worse than simply an inconvenience. A body which is served with food by a dyspeptic stomach receives very poor material from which to rebuild its tissues to compensate for the waste that must go on daily to insure health. If the food is not properly digested, the quality of all the tissues of the body is deteriorated, and leanness of body is soon apparent, resulting at last in emaciation. The stomach sometimes holds up wonderfully under the heavy burdens laid upon it, and even digests a much larger amount of food than is necessary to supply the wants of the body. In such cases the excess of nutriment is thrown off by all the excretory organs, or a temporary diarrhœa is set up to relieve the excess. If this relief through special causes does not occur, the excess of nutriment or digestion accumulates in the tissues, the various excretory organs of the body are clogged, and their healthful activity is gone. Then we have the phenomena popularly known as gout, rheumatism, biliousness, and piles, and any number of serious complaints that we refer to the weather, to la grippe, to malarial toxæmia, or to any cause except the true one. Eating when tired and engaging in active mental or physical exercise immediately after a hearty meal are two of the most common sins against dietetic common-sense rules. As far as our historic chronicles of the past show, as relate to the best physical con-

ditions of the nations that have given us a history, the heavy meal of the day was followed by a two hours' rest or "nooning." Our fast American habits of living from day to day will not accept this anciently established period of rest after a hearty meal, but we can defer this meal to the after-part of the business day, taking at the start a substantial breakfast, but nothing for the noon repast except an apple, a bunch of grapes, or a couple of oranges to appease the hunger in the lengthened intervals between the first and second meals. Two meals a day are all that we require for any work that we have to do. The Spartans were not allowed more than one meal a day. The two meals a day prevail in France, and it is a fact that the statistics show that a longer lease of life now obtains among Frenchmen than among any other nation in Europe.

#### SLEEP AFTER EATING.

It is a mistaken idea among many persons that to sleep immediately after they have taken food is to endanger health by favoring an attack of apoplexy, etc., a supposition based on the assumption that during sleep the brain is normally congested. During sleep, on the contrary, the brain is freer of blood than at any other time. Again, when a full meal has been taken the stomach demands a greater amount of blood to accomplish the work of digestion, and no organ can more easily comply with that demand than the brain, which, when in full activity,

is supplied with one-seventh part of the whole blood of the body. A derivation of blood from the brain to the stomach takes place when the functions of the brain are partly suspended by sleep. By so doing the brain gains new strength, and meanwhile digestion proceeds energetically, and soon both body and mind are refreshed and energized. The lower animals always sleep after eating a full meal if given the chance to do so, and the human being is governed by the same physiological law. The stomach, stimulated by its contents of a good dinner, strives to carry on its marvellous chemistry of digestion, and demands an ample supply of blood for the purpose, and obtains it in greater quantities when the person sleeps. Among the dyspeptics, or those inclined to dyspepsia and indigestion, this knowledge of the demands of the stomach after a good meal and practice of sleeping afterwards should prove to them one of the remedial measures for relief.

#### THE LIVER.

Aside from influences of poisoning from malaria, etc., the liver becomes diseased from an excess of food-supply, and the bile fails to convert or oxidize the food elements; then follow enlargement of the liver and congestion of its vessels, and we have a bilious condition of the system, manifested by tinge of the skin from the bile pigments, discoloration of the conjunctiva of the eyes, symptoms of jaundice, with headache and great depression. The remedy

for this condition is abstinence of food or a change in the dietary for a few days. As a rule, medicine is not necessary to relieve this condition, for the liver will relieve itself if the over-supply of food is checked. If vomiting is threatened, a draught of water in which a portion of mustard is dissolved will hasten the action and relieve the congestion immediately ; after which a day's rest and abstinence from food work wonders in removing the attack of biliousness.

#### CAUSES OF RHEUMATISM.

If the bile secretion fails to convert or oxidize the food elements when in excess, uric acid is formed in excess, and instead of urea being formed, which is easily soluble and is a natural formation, we have union of the uric acid with the salts in the blood, insoluble compounds are formed, and the urine shows, on standing, a brick-dust sediment or gravel. If the liver continues congested, the kidneys will soon refuse to throw off the insoluble urates, and hence uric acid will commence to preponderate in the blood, and by reason of its great insolubility will begin to crystallize in places where the circulation is weakest, as, for example, in an old wound or injury. This condition generally occurs in a muscle, and we have muscular rheumatism ; if the uric poisoning is very great, we have inflammatory rheumatism. Cold and exposure are the convenient means for the development of this uric acid con-

dition, or rheumatic diathesis, as it is termed. This uric acid condition will occur also with those deprived of necessary nutrition as well as among those overfed. In these cases the bile does not receive the equilibrium of food elements to form soluble urea, the normal element, and as a result, as in the other case of overfeeding, free uric acid is formed. Our soldiers of the late war attribute the cause of their rheumatisms to the exposure and privations they underwent in 1861-65, and many have cause for this belief because of swollen limbs and rheumatic deposits in their joints that for want of proper treatment and diet at the time were followed by chronic articular rheumatism. But those to-day suffering from *muscular rheumatism* only do not know that errors of diet, excessive nutrition, want of proper nutrition, and too free habits of life for thirty years since the close of the war have all to do with the formation of muscular rheumatism, and not so much due to the exposures and privations of army life of thirty years ago. And the same reasoning holds good in cases of chronic diarrhœa, the cause of so much complaint among the old soldiers. If the attacks of diarrhœa during army life left no permanent results at the close of the war, the occasional attacks of simple diarrhœa for thirty years since can be attributed to too much or to insufficient nutrition or errors of diet that will cause, every summer season, the usual diarrhœas among the people of every neighborhood. Simple diarrhœa is caused

by the irritating products of fermentation of the food in the stomach and bowels, pain from the development of gas and distention and tympanites, the results of fermentation ; constipation alternating with diarrhœa, and a liver, in some stages of indigestion, in a passive state of congestion. The body is a machine. Its parts are liable to get clogged, and when they can no longer do the work of the machine then comes bodily suffering. The man or woman is really to be pitied who lives for no better purpose than eating and drinking. Why do so many get stuffed up with colds, and if asked how they caught such colds they cannot tell? In the majority of cases the cause is overfeeding. Rich and highly concentrated food in excess is followed by wheezing and running nostrils and aching bones, and these are Nature's efforts to recover the equilibrium. One does not need drugs to cure this kind of colds. A little rest to the stomach works the cure. The lungs, liver, and skin throw off constantly from the body waste material. Arrest the digestive process that supplies the new material to take the place of this waste and the whole machinery becomes clogged, and for relief you sneeze and "catch cold," and it puzzles you to know how you caught it.

The impaired digestion causes constipation of bowels, alternating, it may be, with simple diarrhœa, fetid breath, coated tongue, bad taste in the mouth, and perhaps sick headache, all attributed to a cold that one has caught inadvertently from exposure.

There should not be a dyspeptic nor a sufferer from muscular rheumatism anywhere, provided wholesome food was the rule in our dietary, and also provided that the food we consume was properly cooked, and not, as is too often the case, placed on the table in such a condition as to invite indigestion when eaten. Very many of the diseases that human flesh is said to be heir to have their origin in constipation of the bowels; and errors of diet, and nothing else, are the causes that produce constipation in by far the largest majority of cases. It should be needless to state in this connection that in order to maintain health the bowels should be evacuated once in every twenty-four or thirty-six hours, and no duty in life should be permitted to interfere with this highly essential function. As old age advances, when less food is required to sustain the healthy functions of the body, the daily evacuation is not so imperative as in vigorous life; but even in old age the habit of going to stool at a certain hour should be kept up rigidly. As Shakespeare states, "How use doth breed a habit in a man;" and to be irregular in this respect or to neglect this duty for any other is to commit an unpardonable sin against a healthy body.

#### HINTS UPON DIET.

The great poet in English literature, in his play of "All's Well That Ends Well," states a truism that the highest medical art at the present day cannot



gainsay: "Laboring art can never ransom nature from her inaidable estate." So it is fully established, as has been before stated, that medicinal remedies for indigestion are only crutches to be used temporarily. The great remedy of all lies within ourselves. If our diet consists largely of concentrated foods, such as meat, starchy materials, and white bread, nearly all of the food of this nature is capable of absorption during the digestive process, and constipation follows. We must have with our food, or at least with part of it, elements that cannot be digested and absorbed, but which act mechanically in assisting in the expulsion of waste in the bowels. Hence ripe fruits, like apples, peaches, and pears, eaten with the skin on, furnish some waste that cannot be digested and which acts mechanically in expulsion. Brown bread for the same reason is useful, as well as bread made of rye and corn-meal. Wheaten grits, or cracked wheat, hominy, Graham flour, and oatmeal all contain material that cannot be digested and which act as natural purgatives to a slight extent. The cabbage family among vegetables, turnips, carrots, squashes, and pumpkins, all contain this waste. In constipation, potatoes free from the skins should be prohibited or used sparingly. Upon the question of diet every person should be his own teacher. Occupation has something to do with proper diet, and the temperament of the individual is a factor as well. Closely study the various articles of diet as you use them for food.

If your digestion of them seems good, and there is enough waste taken to allow you a comfortable evacuation every twenty-four hours, you cannot be plagued with indigestion, and your own experience with articles of diet will formulate a rule to guide you to continuous health and necessarily a longer life. Very many cases of chronic dyspepsia, impaired digestive organs, and habitual constipation found in every community are due to the drastic cathartics compounded in the thousand and one differently named proprietary pills for sale in every drug-store in the land, and paraded in the newspapers of the day not only as the elixir of life but the fountain itself. This vice of pill-taking (and constant use breeds the habit in a person) is a most pernicious one, and is the indirect cause of many of the ills to which man is subject. You might just as well blow brick-dust in your eyes to clean out the agglutination of the eyelids in the morning as to throw into your stomach foreign bodies in the shape of pills, and composed of cathartics collected from the mineral and vegetable kingdoms. The mucous surfaces of the stomach and bowels are just as sensitive as the conjunctiva of the eyes, and when injured by the pill-habit the disaster becomes permanent.

The food we eat, if properly selected, gives us all the purgation we need from day to day, and to keep in good health through a long life we must follow common-sense teachings or suffer the consequences.

This experience to each individual is better than the advice of any physician, however skilled in his profession, to correct the errors of diet, and this experience will teach him that "surfeit is the father of much fast if wisdom and knowledge guide the will." It will also teach him that "our remedies oft in ourselves do lie which we ascribe to heaven and the weather."

Our reason and experience in the direction of proper food and proper habits of life, in order to attain a more healthy and a longer lease of life, can be relied upon if the will power is under control. Should excesses in habits come against our experience, our will power should still be able to say,—

"Time hath not yet so dried this blood of mine,  
Nor age so eat up my invention,  
Nor fortune made such havoc of my means,  
Nor my bad life reft me so much of friends,  
But they shall find awak'd in such a kind  
Both strength of limbs and policy of mind,  
Ability in means and choice of friends  
To quit me of them thoroughly."

## CHAPTER VI.

### THE HEART AND ITS FUNCTIONS.

TO describe the action of the heart and the circulation of the blood it will not be necessary to confuse the average reader by a technical description of the anatomy of that organ. The following plain description will give the general reader all the knowledge he needs of the heart and its action, and enable him to understand the diseases of this important organ in the animal economy. The heart is one of the most important organs of the body, and is situated on the left side of the chest, in close contiguity with the lungs. It is the pump of the blood circulation, and forces the venous blood to the lungs and the arterial blood to the main artery, whence it is distributed to the whole arterial system. For convenience of illustration we divide the heart into two parts, the right and left heart, but in reality both sides constitute the heart as a whole. The venous blood from all parts of the body goes into the receptacle or hollow basin of the right heart, thence it is pumped into the lungs; in the lungs the blood receives oxygen from the air we breathe; and the venous blood is at once converted into deep red or arterial blood. From the lungs, then, this blood is returned to the left heart by an opening called the

mitral opening. This opening is provided with valves,—called mitral valves because of resemblance to the mitre of a bishop,—which close firmly in health, when the left heart contracts as a pump to force the blood-current to the great artery of the body, the aorta, that carries it to all the tissues. This great artery at its opening is also provided with valves called aortic valves, which prevent the regurgitation of the blood to the left heart, provided these valves are in normal condition. We thus see that the heart is a muscular pump, with two sets of valves, one closing when the other opens, and both alternating regularly in what is called the rhythm of the heart. By this pump action there appears to be more strain on the left heart than on the right, and it is the part most subject to disease, while the right heart is rarely the subject of disease, except that of sympathy with its neighbor.

The mitral valves in the mitral opening of the left heart control the flow of blood as it comes from the lungs oxygenated; if these valves, or the interior lining of the opening itself, be contracted from disease, we have as a consequence valvular (mitral) disease of the heart. Insufficiency of mitral action causes engorgement of the blood; passive congestion of the lungs is a result, and the prominent symptom of this condition is shortness of breath, and if the mitral incompetency is serious, vertigo and headache follow as sequences. When the mitral valves act imperfectly the heart begins to enlarge to accommo-

date itself to the new condition ; this we call compensation to meet the new conditions. When the aortic valves, situated at the mouth of the great artery that supplies the whole arterial system, are contracted by disease, the situation is more serious, especially if there is mitral insufficiency existing at the same time, but enlargement of the heart (hypertrophy) and dilatation take place, and if in unison, compensation is established, and immediate danger from heart-failure is averted. When both the mitral and aortic valves are invaded by disease the engorgement of the blood in the heart is great, the area of the heart is increased, and the whole heart may be so enlarged that one can see the beatings on the chest-wall at some distance off. When both valves are thus involved any very great sudden effort may prove fatal, and this cause of death is known as heart-failure. A post-mortem examination shows then a puckering or contraction of the inner lining or muscular coat of the valves and the orifices, a result most commonly of rheumatic and scarlet fever or any inflammatory disease that attacks the inner lining of the heart. Blood-poisoning from any cause will affect this membrane and the heart-valves. This contraction or puckering of the inner lining of the orifices is called stenosis. If engorgement of blood through disease of valves and orifices exist, the stenosis is great, and if compensation is not established by enlargement and dilatation, dropsy of the lower extremities follows, and if not arrested, general dropsy occurs

as a sequel. By the observance of general health rules and caution as to any great exertion the compensation is established and becomes conservative, and life is prolonged to a very old age. The heart is a muscle, and, like all other muscles of the body, is capable of expansion and contraction, and enlargement of the heart with relative compensation is not a serious disease, but one that must be looked after for the following reasons. There is no local pain from disease of the valves and orifices of the heart, and, in many cases, no general uncomfortable feeling. In other cases shortness of breath after much exertion is the only distressing symptom experienced for years. But if the general health is not closely watched, venous congestion of the lower extremities and resulting dropsy of the legs become pronounced. These diseases of the valves and linings we call organic diseases of heart, or heart-lesions, and to live long and live comfortably a regular mode of life in its entirety is the only salvation. Remedies for this organic disease of the heart are of very little benefit in a curative sense, but of value in emergencies to tide over exigencies that are liable to happen through the indiscretions of life. A regular life is the only palliative, for there exists no cure for these organic lesions of the valves and orifices of the heart.

Functional disease of the whole heart through sympathy with other overworked organs of the body is a common affection, and the heart is restored to its equilibrium by removal of the cause. These prin-

cial causes are bad digestion, habits of luxurious living, nervous irritability, and excesses of all kinds. These causes will often produce the peculiar heart murmur incident to valvular lesions, but the practised ear of the physician can easily detect the difference, and they are not permanent as in heart-lesion. If there is any doubt as to condition, the physician should make several examinations before making up his diagnosis. Fatty degeneration of the heart will be referred to when we come to consider obesity and its causes and treatment.

Angina pectoris, or breast-pang, is a symptom only, and is simply pain of the nerves of the heart and the large aortic artery. It can be relieved by appropriate remedies.

Palpitation of the heart includes all irregular actions of the heart, attended by feelings of tightness in the chest, short breath, and faintness. The causes of palpitation are irritability of the nerves of the heart produced by altered states of the blood, by habit and temperament, the use of injudicious articles of diet, and, in females, by tight lacing and other causes. To use the quaint expression of a French medical writer, "pain is the prayer of a nerve for healthy blood," and this especially is applicable to palpitation and nervous diseases of the heart. The proper treatment is removal of the cause, which the intelligent physician can easily trace. The differentiation between organic and functional disease of the heart, although a matter



of easy diagnosis to the practised ear of the experienced physician, should never be intrusted to one unaccustomed by actual practice of his profession to the study of the normal and abnormal heart. The functional murmurs are the same as the organic even to the practised ear, but the functional murmurs disappear with rest, pure air, and attendance to the condition of digestive organs by the careful family physician. With organic valvular disease the significant murmur is ever present. Sudden death is rare from mitral insufficiency alone, but lesion of the aortic valves and puckering or contraction of the inner lining of the aortic opening is the most common cause of sudden death from disease of the heart. In consulting your family physician, if you suspect organic disease of the valves, see to it that he makes careful examination with his stethoscope and locates the lesion at the mitral or aortic opening, or both. In aortic lesion the apex beat seems double, but the second beat tells the story in the thump of the regurgitant stream from the aorta, if there is aortic valvular lesion.

The soldier's disease of the heart is a result of acute attacks of diarrhœa or camp fever, or, returning to duty too soon, and standing on his feet too long, he experiences some faintness and palpitation due to nerve irritability or exhaustion.

In these cases there is much disturbance of the action of the heart, a high pulse, and always slight dyspnœa, with bad circulation in the extremities.

If this condition is not remedied by discharge from the service and long rest afterwards, permanent organic disease may follow these functional derangements.

We have not the space to devote to the treatment of the various diseases of the heart except in a general way. From what has been said it will be understood that all functional diseases of the organ are amenable to appropriate treatment and removal of the causes. In organic disease or valvular lesions, caution as to any very great exertion in the pursuits of life should be observed; the maintenance of the general health, freedom from undue excitement of all kinds, exercise in the open air every day or every night by walking only at a moderate pace, cultivating the expansion of the lungs by inhalation exercises and by use of dumb-bells, thus giving more lung area to aid compensation when the blood is thrown back in consequence of mitral insufficiency, and, above all, absolute attention to avoid all irregularities of the digestive organs should be enjoined, remembering always that healthy blood is the fountain of life and the foe to any disease. Even with valvular lesions you can prolong life to its natural term, and die at last of old age or some ailment independent of disease of the heart that you have so carefully guarded through life.

## CHAPTER VII.

### BATHS AND BATHING IN RELATION TO THE PRO- LONGATION OF HUMAN LIFE.

MAN is not a fish nor is he amphibious. He is a land animal with no attributes that enable him to exist in the water. He is made for this reason master of the land and water because his existence depends upon both. He cannot use the land for bathing and drinking purposes, but he can use the water for both. Water is an element of man's existence because three-fourths of the earth's surface is water, and, as man is the lord of creation on this earth, water is an essential factor in his well-being.

Water is three-fourths of the entire bulk of a man's body. It is three-fourths of the whole mass of a man's blood, of the brain, and of the tissues and secretions; and his food, animal and vegetable, is three-fourths water. Water is the only vehicle by which nutritious material is conveyed to the blood, and through the blood to all parts of the system for renewal of waste that must go on from hour to hour as long as life lasts, and water is the only medium through which waste is conveyed from all parts of the system to the excretory organs to be expelled.

Water is the only solvent in the alimentary canal in the process of digestion and the expulsion of waste. Other and extraneous substances composed of three-fourths water may assist, but after the nicety of chemical distinction has satisfied the critical mind, the sum of three-fourths total of water is always manifest. Water is the only material capable of circulating in all the tissues of the body, and of penetration to the very minutest vessels without irritation to the most delicate organism.

For these plain reasons water is an important element and remedial agent in the treatment of diseases to which the human being is subject, but when to apply it and how to apply it to meet the conditions of the individual invalid is a matter committed to the intelligent physician who has his patient in charge. The medicinal baths are the saline or sea-bathing, the alkaline, the sulphur, the spray, the sitz, the foot, the Russian, and the Turkish, and most important of all is the cold water bath. In our reference to the subject of baths we are confined in discussion to that general use of water for bathing purposes that will give a man or a woman of healthy organization a longer lease of life by reason of the proper observance of natural laws.

Man is fitted to drink only water as a beverage, but his genius has devised many medicated waters. He has explored the depths of the lethean spring to find something to add to water to make

it more palatable to the taste and exhilarating to the nervous system. Out of the fruits and cereals of the earth he has manufactured many watery compounds of doubtful utility, because he has learned that any habitual use of them has caused a deviation from the normal in the organic laws of life, and yet water was always the menstruum that carried the poison to his vitals. If he drinks brandy, whiskey, gin, wine, or beer, a large percentage of what he drinks is water. He cannot escape from the water of the earth, although he has added to it substances from the utmost depths of the lethean spring or demons from the confines of hell itself.

In the burial of the dead we are accustomed to say, "Dust thou art, and unto dust must thou return," but, inasmuch as the human body is three-fourths water, why not say, Water thou art, and unto water thou must return? If man had been made three parts of dust and only one of water, perhaps he would be a being of less thirst than he now possesses, and his powers of ingenuity would not be called into play to devise other beverages to take the place of natural water. But there is no telling where his desires and aspirations might have led him in the quest of more dust, if dust happened to preponderate in his make-up. Perhaps the Goulds, Rothschilds, and Vanderbilts would be multiplied indefinitely if all men were thus formed. There is water in the gold-dust and water of crys-

tallization in the diamond, and all the minerals have their precentages of water. Water, therefore, by reason of man's environment on this earth, is his natural drink, and if he bathes for health and cleanliness, pure water or medicated water is brought into use for the purpose. According to his habits of life, his temperament, his stamina as to the physical forces of life, so must be the daily bathing as to the temperature of the air surrounding him and of the water in which he bathes. To maintain his health pure water of the temperature of the air is what a man requires in bathing. But bathing with water at the normal spring temperature of about 50° Fahrenheit is a powerful tonic to the general system. These cold baths contract the vessels of the skin and thus protect the body from the injurious effects of accidental exposure. When a person is confined for a time in a warm place the vessels of the skin lose their contractile power, and when exposed to a cold temperature the body is easily chilled. Cold-water bathing by its tonic properties and hardening process prevents the taking of sudden colds.

All persons cannot accustom themselves to cold bathing daily in winter and summer, but they can accustom themselves to the sponge cold bath every morning, and by quickly rubbing and drying with Turkish towelling, all the beneficial tonic effects of a cold bath are secured in an easy manner. Occasionally, any one is benefited by taking a Rus-

sian vapor-bath or a Turkish air-bath, but too many baths of this kind are injurious, and those who are in the habit of taking them more than once a week or two weeks enervate the system. Bathing as a means of cleanliness is the first consideration, and if cold bathing or sponging is a tonic to the skin in addition, and we know this to be the case, the too frequent use of the hot-air- and vapor-baths produces the opposite effect upon the skin and general system.

Some persons would rather take a Turkish bath any day than eat the daintiest dinner that ever was cooked. Perhaps, if they were daily in the habit of eating dainty dinners of highly concentrated food, great benefit would be derived from missing such a dinner occasionally and taking a Turkish bath in place of the dinner. These high livers go into such a bath with weary, colorless faces, and they come out with pink cheeks and bright eyes, and the world seems a different world to them. Such baths take the place of the bodily exercise these people require and which they have neglected. They also lessen the tendency to obesity in persons who indulge in over-feeding. These baths take the place of natural perspiration, and one cannot be clean nor healthy unless the skin either naturally or artificially performs this useful function. The perspiration carries away certain impurities of the body which are produced by exercise or the daily occupation, and if the person is without occupation that requires some

exertion, or neglects daily exercise, the hot-air- and vapor-baths do the work of nature. The laboring man does not require such a bath,—in fact, it would injure him. All he needs is a bath for a clean skin and the effect of a cold bath for its tonic properties. In ancient times the baths were considered great luxuries and were used to excess, and the people who used them were not instructed as to the benefit or injury derived therefrom. The bath as a luxury was demoralizing to these ancient people, and history treats the subject of bathing as one of luxury only, although cleanliness was at first the cardinal feature in their introduction. The bath as a luxury kept pace only with the downfall of the Roman empire.

The cold bath accelerates the transmutation of the tissues, augments the excretion of carbonic acid from the lungs and urea from the general circulation, and as a consequence increases the appetite. The shock to the system in cold-water bathing is prevented by using tepid water at first, and adding gradually the cold until a temperature of 50° or 60° Fahrenheit is secured. Five minutes is ample time to secure the invigorating effects of the cold bath. The cold bath is the true one for the strong, for youth and manhood, and the warm bath only for early childhood and old age; but even here it must not be forgotten, as a simple physiological fact, that any excess of warm bathing is debilitating. Both hot and cold baths should be used with great caution where there is weakness in the action of the heart or fatty degen-



eration of that organ. Boys without parental control, who, in summer, spend much of the time in water, in the latter part of the summer season are troubled with boils or with skin-diseases that show the enervating effects of too much bathing upon the blood, and oftentimes in the fall of the year they are attacked with chills and fever brought on by the same cause. Our sea-side visitors bathe too frequently and remain too long in the water at one time, and lose in a measure the invigoration that a change of diet and air has brought them during the visit.

## CHAPTER VIII.

### OBESITY.

“ Fat paunches have lean pates—and dainty bits  
Make rich the ribs, but bankrupt quite the wits.”

*Love's Labor's Lost.*

Too much fuel food—that is, food containing fat, starch, and sugar—that has not undergone combustion by the oxygen supply of the body tends to obesity. Any decrease in the supply of oxygen will also tend to corpulency.

Want of exercise in the open air and habits of mental and physical inaction will cause obesity, if much of the fuel foods is consumed daily. Liquids also make fat. There can be no doubt about this fact. The character of the liquid has a great deal to do with it, but the practice of much drinking invariably leads to unwieldy bulk. In Spain, where the men drink but little, a fat man is scarcely known. In Paris, where the men content themselves with sipping absinthe or cups of black coffee, the Frenchmen are thin to a remarkable degree. The women, on the other hand, drink great quantities of champagne, Burgundy wines, and beer, and they, as a rule, are prone to stoutness. In England the people drink heavy ales and beers, and they are a heavy race. In Germany the fat men are numerous, from exees-

sive beer-drinking. A moderate excess of weight does no harm, but when the excess is great it is an abnormality amounting almost to a disease. In almost every case it may be said to point to the consumption of a hurtful excess of food and drink of some kind. Fat people who wish to become thinner should realize this fact. They will often say that they do not eat or drink more than others. But excess of fat can only be made from excess of food and drink, and it has been proved that a deposit of only one-quarter of an ounce of fat daily will, in ten years, increase the body weight *fifty-seven pounds*. The familiar process of fattening animals for food teaches us that fat can be rapidly formed with the appropriate food for that purpose at hand. When the age of growth is ended and is succeeded by an active life, food is needed to develop muscular and nervous energy as before, but the food necessary for growth is needed no longer. Again, when the period of growth is succeeded by an inactive life or habits of self-indulgence, then, if the same amount of food and drink is taken as was consumed during growth and vigorous exercise, the body has to deal with an excess of fat. Excess of food and drink and bodily inactivity, with here and there a case of inherited tendency, are the causes of obesity. Medicines, as a rule, are useless remedies in the case of obesity, but to diet alone—a stern, consistent, and logical adherence to a prescribed diet—is the only permanent cure.

The flesh-forming foods and drinks must in a measure be eliminated from the diet of a person wanting and willing to become thinner. Many systems and formulas have been experimented with to make the fat leaner and to prevent the deposit of fat in the general system. The medical world has of late years settled upon the Schweninger plan, introduced by a German professor of this name, and it was the plan practised upon Prince Bismarck, who became lean under this treatment. The objects aimed at in this cure for obesity are: First, to strengthen the heart-muscle; second, to keep the heart normal; third, to regulate the amount of fluid in the body; fourth, to prevent the further deposit of fat in the body.

The heart-muscle is strengthened by enforced exercise by walking, and, when practicable, by climbing heights. The person under treatment is required to walk slowly up-hill, and when palpitation comes on stop until he again breathes freely, but is not allowed to sit down. It is enjoined that this walking shall be continued daily from one to three hours. In obesity of any long standing the heart-muscle has taken on fat, and the object is to get rid of it and prevent fatty degeneration of the organ. The only way to accomplish this is by increasing the vigor of the heart by exercise in walking and climbing, commencing gradually at first in order that the organ shall not be put to any extra strain until its vigor is somewhat improved. After walking in the open air the

patient is required to walk up two or three flights of stairs, stopping the moment palpitation is induced. Caution is given not to take too much exercise of a climbing nature, especially at first.

To preserve the normal composition of the blood the food should be chiefly albuminous, and consist only of the lean meat of roast or boiled beef, veal, mutton, game and eggs, green vegetables of the cabbage family, and bread to the amount of six ounces a day.

To regulate the amount of fluid in the body the amount of drink daily must be limited,—one cup of coffee, tea, or milk in the morning and evening, and one-half pint of light wine with one-half pint of water only the rest of the day of twenty-four hours. In hot weather the amount of fluid may be slightly increased. *Beer is wholly forbidden.* The discharge of fluid from the body is promoted by the exercise made to strengthen the heart, supplemented with a Turkish bath twice a week. To prevent the further deposit of fat the principles of diet must be carried out faithfully as follows:

*Morning.*—Six to eight ounces of liquid coffee or tea, with a little milk, and three ounces of bread.

*Noon.*—Four ounces plain soup, six ounces roasted or boiled beef, veal, game, or lean poultry, a little fish cooked plain without fat or butter, one ounce of bread, and four to six ounces of fruit. No fluids except the soup; but in hot weather six ounces of light wine or water are permitted.

*Supper.*—Two boiled eggs, soft; two ounces of bread, salad and fruit, and a small slice of cheese; six ounces of light wine, and the same amount of water.

A larger quantity of liquids than that prescribed should never be taken at one meal. It is best to drink the quantity allowed in small portions at different times of the day. In corpulency, with only slight disturbance of the heart, the quantity of fluid can be increased, especially in the evening.

Such is the so-called Schweninger or Oertel cure, or plan of treatment for obesity. It is considered preferable to Banting's plan, because of the attention given to increasing the vigor of the heart, which is the serious vulnerable point with all obese persons. Several of the health-resorts of Germany and Switzerland have been selected by Professor Oertel as suitable for what he terms his "Terrain-Kur." For this purpose he prefers resorts surrounded by mountains, on the sides of which are graduated walks of increasing difficulty of ascent, and extending up several thousand feet. Such walks have been mapped out by him at Baden-Baden, Gersau, Botzen, Davos, Meran, and elsewhere. It is necessary that the mountain-sides should be provided with good paths, some of gradual ascent, some steeper, some very steep; that they should be surrounded by agreeable and varied scenery to amuse and occupy the mind of the patient; some of the paths shady, and others exposed to the sun to invite

perspiration. It is reported that the plan of treatment has operated effectually in every case, and that Bismarck owes his long lease of life and his present excellent health to this treatment that he subjected himself to several years ago.

Our mountain ranges in Virginia, Tennessee, North Carolina, and Pennsylvania furnish many available sites suitable to Schweninger's plan for the treatment of obesity; and while so much attention has been given in this country to the establishment of sanitariums for the "gold cure" of intemperance, it is remarkable that sanitariums for the cure of obesity and disease of the heart have not been more generally established on this side of the Atlantic, where thousands who suffer from these causes would find relief to an absolute certainty; a condition that has not been entirely realized by the "gold-cure" establishments for the relief of chronic alcoholism. In short, I think if the same plan was adopted that we now so successfully practise for the cure of obesity, in the case of chronic alcoholism also, the result would be more satisfactory than is now noticed under the so-called "gold" treatment of this unfortunate class of people, who have been made or who have made themselves victims to alcoholism. Again, these victims as a rule suffer from obesity, the natural pathological result produced by the excessive use of alcohol; and I have never known a victim of chronic alcoholism whose heart has not suffered to a greater or less extent from the inordinate indulgence.

## CHAPTER IX.

### NERVOUS PROSTRATION, AND NERVOUS DISEASES IN GENERAL.

VISIT any one of the larger hotels in any city of the United States, and there you will see a type of men who are living rapid lives. The commercial men especially seem to live on the lightning plan. They figure upon the minutes of time, and a minute lost out of the calculation is money lost. Even the hotel registers show the economy of time. The man from Chicago writes it "Chi;" from Philadelphia, "Phil;" Cincinnati, "Cin;" Harrisburg, "Hburg;" Pittsburg, "Pburg;" Cleveland, "Clev;" New York, "Nycty;" Baltimore, "Balt;" Rochester, "Roeh'r," and so on, while the orthography of the guest's name is scarcely legible. All is excitement and rush with the commercial traveller, as a rule. At a leading hotel in the city of Washington one of these busy men ate his dinner in sixteen minutes, as timed by the head waiter, and he went through the menu, as follows: "Soup, fish, roast beef, roast turkey and cranberry sauce, veal curries, oyster patties, apple fritters, Brussels sprouts, fried parsnips, lettuce, mashed and sweet potatoes, celery and onions, apple pie, English plum pudding with brandy sauce, grapes, apples, bananas, ice cream and cake, molasses



candy, Rochefort cheese, pot of coffee, water." He finished the whole in the time mentioned except a part of the ice cream, which was too cold to swallow rapidly. "Good digestion waited on appetite," no doubt, up to this meal at least, but how many meals of this quantity and variety could be swallowed before indigestion would be manifested? *and impaired digestion in seventy-five per cent. of all cases is the primary cause of nervous prostration*, culminating finally in general disease of the nervous system. A depraved appetite will induce unnatural thirst, with strong desire for stimulating drinks, especially for wines; then follow, in rapid succession, heartburn and sick headache, the first conditions of nervous prostration. Those persons having a large development of the brain and nervous system are susceptible to this prostration, following errors in the habit of living and undue excitement of occupation. The remedy of course is abstinence and rest; and if the nervous system has suffered to such an extent as to alarm the subject, he should at once consult the family physician. In the very worst cases requiring the building of new nerve-tissues, I have found the syrup of the hypophosphites to be most invaluable in combination with other general treatment. The hypophosphites are great builders of new tissues, and are invaluable for this reason in all diseases like phthisis, where there is great waste of tissue, and in nervous disorders, where healthy blood is the prerequisite to the restoration of nerve-tissue and power.

The person suffering from nervous prostration is usually despondent, has a fickle temper, morbid appetite, voracious at times, and uncertain will-power.

A marked increase in suicides is annually taking place in the United States, and there are reasons for it. Our country is young. Every one of active temperament is in eager pursuit of wealth, fame, and pleasure. Overwork, dissipation, overfeeding, and reverses of fortune, with undue indulgence of the passions, break down all at once the delicate structure of the brain, and the morbid will-power tempts the unfortunate victim to seek a surcease of his ills in the suicide's dishonored grave. No sane person ever committed suicide, or at least we can say that the reflective powers of the brain of the victim have wholly given way, and if apparently sane previous to the act, it was simply a show of method in the madness. Nervous, feeble, and restless individuals are they who suffer from mental prostration, and recovery is easy if the condition is due to diseases of the digestive organs; and, as I have stated, this cause represents seventy-five per cent. of the whole number who thus suffer, the other twenty-five per cent. representing those who suffer from accidents to the head and spinal column, to sunstroke, to some fevers, and the tendency to inherited insanity, etc. These latter for the most part are the ones who fill our insane asylums, but the former class is also represented.

The nervous sufferer from the errors of life in eating and drinking and general habits should

change his whole manner of living, not suddenly, perhaps, but gradually, as circumstances indicate from day to day. The main point to consider in the treatment is to remove the cause or causes that brought about the condition, and in this respect the average physician is very generally deficient in management. A trained nurse, as a rule, is more successful than the physician, especially if the nurse be instructed what to do in the plan of treatment decided upon for each individual, for no two cases can be managed wholly alike. Plain, simple, but nutritious diet is of primary importance, and whatever food is consumed should be well digested, and means taken to secure this end. Regularity in the alvine discharges is of paramount importance, since this function, if regularly performed, is one of the greatest adjuncts to digestion. Tonic bathing—that is, cold-water bathing—strengthens by creating an appetite for food, and digestion is improved thereby. Of course the skilful family physician is the one to trust to in your dilemma, and if he has your confidence you must improve ; but one thing is very certain, and that is that the indiscriminate use of many drugs and medicines, tried by way of experiment, will avail but little, or, on the contrary, will damage more than benefit. Restoration of the natural functions of the body by proper diet, tonic treatment, natural exercise, with healthy work and ample rest, is the chief thing to be looked after in the treatment for nervous prostration.

## CHAPTER X.

### REST—SLEEP—SUNDAY.

“Threw off his spirit, his appetite, his sleep, and downright languished.”—*Winter's Tale*.

REST of the whole body accomplishes two ends,—repair of the weakened organs and the arrest of further waste of the nerve force.

Rest by sleep, with a healthy man, does not in itself restore energy to the weary limbs, but the sleep places the person in the best possible condition for nature's recuperative powers to exercise their sway without interruption.

Sleep is a preventive as well as a cure for disease. A healthy adult can for a long time do without much sleep, but it should never be forgotten that the want of it acts as a great predisposition to fevers and all contagious diseases, as well as to disorders of the brain and its membranes.

The ancients denominated sleep to be the half-brother of death, and we moderns have learned to know that rest of the body at stated intervals, even without sleep, is a twin-brother to slumber.

The overworked and careworn mind finds rest in cessation from all mental work, in change of scene and society, in light reading, in music, in the opera

and the play, and from that condition described as follows: "Seeing that too much sadness has congealed your blood and melancholy is the nurse of frenzy, therefore have thought it good for you to hear a play and frame your mind to mirth and merriment which bars a thousand harms and lengthens life."

But the waste of nerve force of the whole body must be restored by sleep, and insomnia is only the result of the disturbance of the equilibrium of the nerve forces when restoration is denied from causes that, commencing with insomnia, end in epilepsy, idioey, or insanity. We, therefore, should look upon insomnia at its outset as the forerunner of grave mental disturbances. Yet how easy to relieve it by inducing sleep, that quickly ends the disturbance of the equilibrium. An evening walk before going to bed, a full or a sponge-bath, a cup of warm beef tea, or a tumbler of milk heated almost to the boiling-point, and many other like simples, will bring the needed sleep and rest, bearing in mind that the use of drugs and opiates to force sleep, unless in stubborn attacks of the disease, only increases the danger. In insomnia especially is the truism applicable that "laboring art can never ransom Nature from her in-aidable estate."

The rules for hours of sleep are arbitrary. The infant thrives best that sleeps most of the twenty-four hours; from ten to fifteen years of age, the youth should sleep at least ten hours of the twenty-

four ; from eighteen to twenty-five, the adult should sleep at least eight hours, and from twenty-five to fifty years of age, seven hours at least. After fifty years of age nature calls for more or less sleep in proportion to the work performed and the waste of the body that needs restoration by sleep. After fifty years of age nature, as a rule, makes the demand, and, unless there is mental disturbance, as indicated by insomnia, nature forces the requisite amount of sleep at some time during the twenty-four hours. In many cases a day sleep of half an hour, especially after meals, is more restful than at any other time.

Does the human being require more rest and cessation from labor and occupation than is afforded by the hours for sleep and rest and recreation in the twenty-four? In Solomon's time the twenty-four hours were divided into three parts,—eight hours for labor and occupation, eight hours for rest, refreshment and recreation, and surcease of all labor, and eight hours for sleep. In addition, one day in every seven was established ostensibly for religious worship, which day it was enjoined to keep holy and that man should do no work. Like all other ordinances of the Mosaic dispensation, there was the utilitarian and sanitation side of the question involved ; but the edict was commanded and enforced as of Divine authority. This assignment of a day of rest in every seven days is shown to be a bodily necessity, useful in every way to the health and comfort of man. Heathen mythology, in reference to many

holidays, was instituted in about the same way and with the same purposes in view. The continuous and incessant days of toil, labor, and occupation without a break now and then were not good for man. Modern physiology proves this fact that the ancients established mainly for religious worship. We now see that, in addition to the religious regard for the day and the holy observance of the Sabbath, the duties of the day even in this respect brought about, on one day in every given number, such changes in the occupations of a community as are essential to the preservation of the best physical condition.

Monotony in occupation sometimes produces disease in the human system, and man is not constituted, like the works of a watch, to run on indefinitely after he has been wound up by a few hours of refreshment, recreation, and sleep. Our Puritan fathers made the Sabbath almost a fast-day, and the Sunday is perverted when the day is used for a day of feasting and revelry. The stomach and other digestive organs need this respite from labor occasionally as much as man does for himself as a whole, and the Puritans in this respect builded better than they knew. Their whole object in fasting had no reference whatever to any health condition, but emanated as the religious requirement of the zealot, proving the truth of wisdom's philosophy, that religious zeal without knowledge is religious frenzy.

The cessation from man's accustomed toil and

occupation of one day in every seven is in obedience to both Divine and human law, and if the person spend it wholly in religious devotion, the sanitary condition of change of thought and occupation is fulfilled. The *change* is what the brain and brawn both need after six continuous days of routine work. In many States of the Union a Saturday half-holiday has been legally established with this idea of more rest in view. But if this time of rest from the usual vocations of life be spent in any way that militates against the laws of God and man, the great object is frustrated, and man in a physical point of view becomes the loser by his own wilfulness. Still it would be folly, on the other hand, to deny to the children of six days' continuous darkness and toil the heavenly influence of the Sabbath's sun, and the restful effects of the green fields and the incense of blooming flowers. The *change* is what is wanted to fulfil the design of nature and of nature's laws, but the change should be amenable to the every-day physical laws that tend to the preservation of health and a long life. Unless this fact is borne in mind, man would be better off, as long as he lives in this world, without any day of rest; or, what would be still better, the law of the land should reach out its protecting arm to these wayward children of men and force a day of compulsory rest and change in the vocations of life.

Taking this view of the matter, in addition to the usual religious observance of the day, or the most of



it, in religious devotion, there can be no physical harm, nor violation of the laws of God and nature, if part of the day is devoted to exercise in walking or in travelling, in pleasant visits to friends and relatives, in enjoyment of the balmy air of heaven, or in any change from the work-day routine of life, provided that in any way you annoy not your neighbor by trespass on his rights, nor violate any reasonable law of God or man.

## CHAPTER XI.

### CHRISTIAN SCIENCE—FAITH HEALING—MASSAGE —MESMERISM AND HYPNOTISM.

COMFORT, cheerfulness, and hopefulness are the best promoters of a happy existence in this life. We hear it oft repeated that we are now living in a wonderful age, and we can congratulate ourselves that science has reached a point that insures to the human race an ever-increasing mastery over the powers and resources of nature which will in time be productive of better conditions of life, not for the few, but for all. Things that to our forefathers were not capable of demonstration are to-day natural phenomena capable of easy solution. The mysteries of electricity of a few years ago are known facts of to-day, and so on through all the realms of science and scientific research.

The facts with respect to the pretensions of Christian science demand and deserve a thorough investigation. Assuming the facts of certain results achieved, the reason therefor is a subject of profound thought, to be explored by the finite mind or relegated to the infinite or unknowable. If the results achieved are miracles, then we have only the repetition of the former age of miracles, when, out of the

natural course of things on this earth, supernatural means were used by those to whom was intrusted the miraculous power. If, however, this power can be no longer considered miraculous, but is simply the evolution of science in knowable manifestations, we can indeed say that the age of miracles has passed.

The alleged healing of disease by religious faith, without the employment of any physical agency, really means that the *faith* is sufficient without the actual *presence* of one endowed with the power, and out of this fact it is claimed that a religion of science, or a science of religion, can be and is evolved. But why create a science in the light of past human history for this interposition of the Divine healer who by *faith* always is with us even now, and forever will be, as when He performed His miracles two thousand years ago?

We read that one of the prophets of old said, "Zeal without knowledge is religious frenzy." If we believe in one we must believe in both,—that the *Presence* and the *faith in that Presence* is one and the same power; and is miraculous, if diseases in these modern times are cured by faith, and there is no ground for disbelief in view of many well-authenticated cases reported from time to time the world over. But, surely, it is zeal without knowledge that would attempt to refer to human science these wonderful and miraculous manifestations of the Divine will that every true Christian believes in, to absolute submission, and to the utter denial of other agencies,

save to those human means blessed by the Great Physician. If any one is cured by faith alone of an incurable disease—or one pronounced incurable—under human means, we need no science to tell us how the cure was accomplished. We know that by faith Nature was assisted in her work of cure, and we know also that nature is the name of an effect whose cause is God. Every physician of experience knows how faith in himself—a human being—works upon his patient. If one has the absolute confidence of his patient, no matter what the disease, the eye brightens at his approach, the pulse is calmed, and the agitation and anxiety of the mind cease as he takes into his hand that of the invalid. But this influence is allied to mesmerism and hypnotism, and cannot be for a moment considered in connection with Divine interference except in so far as human means are divinely blessed for a given purpose.

NATURE IN DISEASE WORKS FOR THE CURE  
ALWAYS.

The *vis medicatrix naturæ* is a power more potential than the drug-store in overcoming disease, and faith in the human physician is a powerful aid to Nature in her conservative efforts to throw off disease. How much greater should be the faith in the Great Physician to laboring Nature in her efforts to restore health, provided the patient firmly and sincerely believes it is the Divine will that he should survive this or that physical trial? I can see

nothing more than this philosophy and this religion in the so-called Christian science and Faith healing, that is as old as the faith of man in his Christian belief of Divine interference and Divine reliance when human means have failed. It would be a sacrilege of man's dearest hopes in this life, and a travesty on his faith, that would create out of human means a science of religion that can have any connection other than with the faith that comes through revealed religion and the miracles performed, to prove to the sceptical that God reigns in this universe. The age of miracles has not passed, nor will miracles cease as long as finite man lives on this earth and acknowledges and obeys the Divine will within all reasonable limits of belief in Omnipotence, and man is so constituted mentally and physically that he can never lose his inheritance of dependence upon his Creator.

Many of the so-called Faith cures, when analyzed, show only the operation of mesmerism and hypnotism upon the subject, for it is blasphemy to assert that always at the command of a human being a miracle is manifested. "Thy will, not mine, be done," is the submissive prayer of every one who believes in the power of Divine intercession, and, from causes that the finite mind cannot understand, the earnest prayer of the most faithful to all Divine obligations cannot always be answered in the manner most desired by the human being.

## MESMERISM AND HYPNOTISM.

What is designated as mesmerism and hypnotism is, in reality, one and the same thing.

The nervous system consists of bundles of nerves, called nerve-centres, and two sets of nerves, like numberless telegraph-wires,—one set receiving the impression from the outside and carrying it to the nerve-centres, the other set, called motor nerves, carrying the impression on the telegraph-wire to the muscles and vessels of the body. When we start to walk the impress, before we move, goes to the nerve-centres, and as soon as the impress gets on the return wire, or motor nerve, we start to walk. The brain and spinal cord is, of course, the great nerve-centre, or, rather, an aggregation of nerve-centres. We have centres for sight and hearing and all the special senses, and the impress from the outside, conveyed by the carrying nerve, sets the motor set of nerves in action. Although this action is simultaneous with the two sets of nerves operating on the nerve-centres,—the one taking to and the other carrying from,—yet there is an interval in the workings of the two travelling sets of nerve-mechanism, and because of this almost inappreciable interval in action we witness the phenomenon of the mesmerist and hypnotist in arresting the action of the return telegraphic wire, and the subject as in a sleep is controlled—not wholly, but partly—according to the temperament. In sleeping one set of these nerves is

awake while the other is asleep, hence a dream indicates only one-half action, and that half vague and indefinite and only occasionally recollected.

The mesmerist or hypnotist who has the power of arresting this circuit of nerve-action has his subject in about the same condition as when a person is asleep, with perhaps not quite as many nerves in non-action as in sleep. The stern voice and fixed glance of the operator arrest the nerve-action, and faith in the operator, together with the possession of an easy impressionable set of nerves, constitute the phenomena. There is no control of the subject by the will-power of the operator, as claimed by some impostors. We have yet to prove whether this power, possessed by a few only, will have any useful effect upon disease or health.

#### MASSAGE.

Massage, when properly used, is a valuable remedial agent. It is more than rubbing over the surface of the body, as in bathing. The body is kneaded in all directions, as the baker kneads his dough, and the currents of blood in the dormant capillaries are hastened and the accumulations of waste in the unused muscles are thrown off. United with the tonic or cold-water bath, massage treatment is valuable in both disease and health,—in disease by increasing the surface circulation, and in health by keeping the surface circulation in normal channels.

## CHAPTER XII.

### DISTILLED SPIRITS—ALCOHOL.

“What three things does drink especially provoke?

Marry, sir, nose painting, sleep, and urine.”—*Macbeth*.

UP to the sixteenth century there are very few notices in medical literature of the influence of inebriety in causing disease. Little was said even in the seventeenth century, but Harvey, the discoverer of the circulation of the blood, described certain diseases of the liver that were ascribed to wine-drinking, or chronic alcoholism from excessive wine-drinking. The early part of the eighteenth century marks the period when distilled spirits were first introduced as a beverage, and in the year 1724 the College of Physicians in London made a public representation of the evils of spirit-drinking, while earnest efforts were made by the profession in England to check the rapidly-growing practice. From 1840 to the present time, the era that marks the rise of pathological investigation, the subject of the relation of alcohol to disease has been ably and amply discussed.

The College of Physicians in London only recently condemned the habitual use of alcohol because of its poisonous nature, but did not condemn it as a medicine. The habitual use of distilled liquors, wines,



and brandies injures the stomach, liver, and kidneys, and in chronic alcoholism the changes in the brain-tissues are like those of very old age ; the respiration suffers, catarrhs of head and throat are induced, accumulation of fat takes place, also skin diseases, with sometimes the accompaniment of "nose painting."

Dr. William Pepper, the ex-Provost of the University of Pennsylvania, and a standard authority on all medical subjects, says of the alcohol-habit: "The effects vary enormously with the amount consumed and with the form in which it is taken, but they are always bad. Alcohol is strictly a drug, and belongs to that class of substances which habit renders agreeable, but which are followed by constant increase in the craving for more frequent and larger doses. The increasing desire is one of the worst effects of its habitual use, and for this reason its use in small amounts, even as medicine, should be carefully considered. Perfect health cannot be enjoyed with even a moderate use, while it is certain that the *highest possible health* may be enjoyed without its use. I make an exception in favor of some elderly persons with slow and feeble digestions and with weak circulation ; for them a small quantity taken daily and in the diluted form with the principal meal improves their health.

"When once we pass the lesser degrees of the use of alcohol, the effects of its habitual employment are striking and disastrous in causing organic diseases

of mind and body, and associated with these deplorable results is neglect of proper diet and proper hours of rest, for the sleep it induces is an unnatural sleep.

“The true use of alcohol is as a medicine in the treatment of certain diseases. There, when prescribed judiciously, it does great good and is at times indispensable.”

Man from his earliest history has been accustomed to the use of alcoholic beverages in some form. The Roman senator drank his Falernian wine and became drunken. Noah did the same thing, not with Falernian wine, but with some other brand that he took with him into the ark and unfortunately brought out with him. The tramp of the present day begs five cents to buy a gill of mean whiskey from some licensed vender of the same vile stuff, and he is drunken, and poisoned, too, by some blended compound, cheaper than ordinary distilled spirits, to enable the vender to make the profit to pay for the license that certain so-called wise men and statesmen impose upon him for the privilege of slowly murdering his victims. Alcohol is bad enough by itself considered, whether found in wines, brandies, whiskeys, and gins in varying proportions of percentage; but the system of “blending” and adulteration, so common nowadays among those skilled in the art, makes proverbial the saying, “that you cannot find a drop of *pure liquors* in more than one-half of the licensed saloons in the United States.”

The ancients drank their wines, and sometimes drank to excess, especially at their public festivals, and adulteration of wine sold to the public was visited with cruel punishment to the maker of it. They used light and heavy wines, so determined by the given percentage of alcohol in them, and some of the brands were as heavy in this respect as the brandies of the present day. The moderns learned to make brandy by distilling wine, and the product is of course much stronger in alcohol. Absolute alcohol contains ninety-five per cent. of alcohol, leaving only five per cent. for water and essential oils. It is used in the arts, and many physicians use it diluted with distilled water as a medicine, instead of the vile compounds now manufactured and blended and sold under the name of medicinal wines, whiskeys, gins, and brandies. The brandies, whiskeys, and gins of the shops vary in the percentage amount of alcohol, running all the way from forty to sixty-five per cent., the remaining bulk, to the full one hundred per cent. of the compound, being composed of essential oils, flavoring extracts, and water. Distilled spirits are made from corn, wheat, rye, and barley, and proof spirit or cologne spirit is the product, which, in reality, is nothing more than diluted alcohol. Refine this diluted alcohol and we have the market whiskeys which the dealer fixes up or blends to suit the taste of his customers. The dealer can age the whiskey by a process peculiar to the trade, and a green whiskey

can be made to seem several years old. By the time the retail dealer is ready to sell these wares over his bar, it would be a difficult matter for the analytical chemist to tell what are the ingredients of a gill of the compound. How could a man expect to live long who, every day of his life, used these compounds as a beverage?

It is now generally conceded by medical authorities that two ounces of fifty per cent. spirits, or diluted alcohol, so that the amount of the alcohol in the two ounces shall not exceed one-half, or about the usual strength of good whiskey, can be taken daily for years without injury to any organ of the body. This is the *toleration point*. But when the amount daily taken exceeds this point, and when "use doth breed a habit in a man" to daily increase the quantity, as it will do in ninety-nine cases in a hundred, the prolonged abuse is followed by sure and certain disaster to every organ in the body. The freedom from the drunkard's variety of diseases, among those who drink only the mild American beers made from hops and malt, gives them a leeway in drinking enough beer to satisfy the thirst, and be short of the two ounces of alcohol as the toleration point, American mild beer having such a very small percentage of alcohol in its composition, say about three per cent. Yet a man can make such a hog of himself as to drink this beer beyond the toleration point and become boosy from it; but imagine to what capacity that man must enlarge his stomach

to accommodate the quantity of beer to make him so. Rapid transit by water transportation will relieve the swelled and bulging stomach, but no power can discharge the alcohol that has in the mean time found its way to the portal circulation, thence to the brain, and either let loose the hinges of the tongue, or bids the victim of excessive beer-drinking seek the couch of unrefreshing sleep.

Fortunate is it that a man who confines his indulgence to mild beer has not always the insatiable thirst and stomach-stretching capacity to make a beer-drinking drunkard of himself, else we would not witness the fact that one billion gallons of beer were consumed in the United States last year without serious detriment, as far as can be ascertained, to the general health of the beer-drinking public.

In a hospital in Europe, where were confined two hundred and fifty victims of chronic alcoholism, ninety-nine per cent. of them had fatty degeneration of the liver; sixty per cent. had congestion, or dropsical condition of the brain; sixty-five per cent. had diseased stomachs that would not digest anything except diluted alcohol; and all had disease of the kidneys of some type. When admitted to the hospital, all were victims of excessive obesity, and the heart of each was enlarged and dilated to enormous proportions, with fatty degeneration of the organ. Post-mortem examinations, of course, revealed these organic diseases, and how could it be expected that men thus enslaved and environed by

the demon of alcohol should survive for any length of time?

There is yet a worse condition of human existence that we have had to encounter in this connection, and every hospital in the land furnishes its victim. This is the dipsomaniac. Here is exhibited the climax of toxic delirium. Under the law we regard drunkenness as a misdemeanor only, but common drunkenness is no palliation for crime committed. The dipsomaniac is a creature who, in his whole organization, from unvarying indulgence in excess from time to time of alcoholic drinks, suffers from the accumulation in the system of the specific alcoholic poison. The tissues of the body and the nervous system, which of course includes the brain, become at length so impregnated, so charged with the alcoholic poison, as to produce in the unhappy victim of this condition a craving for the accustomed stimulant that no will-power of his own can resist. The common drunkard, who is always amenable to the law, chooses at times to seek the intoxicating, the absolute exhilarating effects of alcohol. How happy is he for the time being under this influence, and, after the paroxysm is over, how contrite is he, and how much overcome by remorse, while his will-power controls him from another debauch for perhaps a long period; but the dipsomaniac has at all times a craving for alcoholic stimulants that is irresistible because his will-power is gone. The neuro-pathic diathesis resulting from alcoholic indulgence

is established, and he ends his days in the insane hospital, because the tissues of the brain are so impregnated and, in fact, changed by the toxic effect of alcohol, that recovery is impossible, and he goes to his grave the victim of a habit that the license laws of the different States of the American Union have made, in order to place money in their respective county and town treasuries to preserve order and the observance of law in their respective localities! Another century will not have passed in this country before the rulers then holding the reins of our State and national governments will classify the license judges under the law at the present day with those who lawfully hung witches in Salem, Massachusetts, over two hundred years ago, with the comparison in favor of the Salem judges, because they only removed those few people from the earth who were believed to be a menace to the peace of a community, while our law-givers sell for a price the privilege to certain individuals in a community to slowly murder any number of their own fellow-citizens.

Alcohol *per se*, and not the mixed and adulterated compounds of the shop and saloon, is an agent in securing health when confined to the amount within the tolerant point, especially if the system has become so environed by habit as to require it. Again, in wasting disease, like consumption of the lungs, it plays the rôle of a brake applied to the wheels of life by arresting the oxidation of the food, and, as a

sequence, lessens the wear and tear of the lung-tissues. In short, alcohol is a medicine, and therefore it is not necessary for a healthy man at any time of his life. But when a wasting disease comes from any causes that may environ any one in this earthly life, the judicious use of alcohol will prolong the life, in arresting, as before stated, oxidation, and thereby favoring the accumulation of fat in the system, thus furnishing indirectly material for the wasting disease like consumption of the lungs to feed upon. Even in these cases the use has to be confined within the toleration point, since an excess of the medicinal action would cause more harm than benefit.

In any event, if the physician finds it necessary to prescribe alcohol to prolong life, let him write his prescription for the absolute alcohol of the chemist, that we know is pure, then instruct the friends of his patient to add to it an equal amount of water, using sugar or some fruit-syrup for flavor, and thus use it discreetly with the diet given the patient. If then there is any benefit to be derived in prolonging life, it will be seen that the diluted alcohol thus prescribed by the physician accomplishes it more satisfactorily than the prescriptions given for the wines, brandies, and whiskeys of the shops.



## CHAPTER XIII.

### AMERICAN MILD BEERS.

PAREIRA, the oldest of authorities, and perhaps the greatest medical botanist that has ever lived, says, "The practice of taking a moderate quantity of mild malt liquor, of good quality and free from adulterations, at dinner is in general not only unobjectionable but beneficial."

Considered dietetically, beer possesses a threefold property: First, it quenches thirst; second, it stimulates and cheers, but unless taken in very large quantities at one time does not intoxicate; third, it nourishes and strengthens. Its power of appeasing thirst depends on the water it largely contains, and its nutriment or strengthening quality is derived from the sugar and starch extracted from malt in fermentation, while the bitter principle of hops confers on beer its tonic properties. The heavier kinds of malt liquors should be avoided because of the narcotic poisons in them, such as lupuline, etc., which destroy the digestive functions and are the cause of the heaviness of feeling experienced after use. But mild beers and aerated cider or cider wine are aids to digestion when taken in moderate quantities. Like almost everything else, it is the

moderate use that is unobjectionable. The enormous and constantly increasing manufacture and consumption of beer in the United States has a significant meaning that should not be overlooked by our legislators and others who have the welfare of the whole people in their keeping.

The total consumption of American beer in the United States for the fiscal year ending June 30, 1895, was nearly one billion gallons, and this amount was an increase of seven millions of gallons over the consumption of the preceding year. On the other hand, the manufacture and consumption of distilled spirits do not keep pace with the increase of population ; in short, the consumption of whiskey and other distilled spirits is decreasing in the ratio that the consumption of beer is increasing. What does this mean ? May it not be a fact that this enormous consumption of beer and the falling off in the consumption of distilled spirits is unconsciously doing more for real temperance reform than all the temperance societies and temperance agitators combined ? The subject is one of deep import to our whole people and demands serious consideration, in view of the future beneficial or disastrous results as the outcome of the beer-drinking tendency of the American people. We know full well the disasters of the past attendant upon drunkenness in the land through the use of ardent spirits. Is the substitution of beer only a change in the programme, with the same appalling disasters of habitual drunkenness as the

*finale?* Of course it is to be presumed that our foreign population, especially our German citizens, consume much of this beer, because beer is the drink of the fatherland, and they have brought with them their social habits, but it cannot be denied by the attentive observer that beer is fast becoming the standard drink of the native-born citizen in place of the whiskey of his fathers.

The friends of the "gold-eure" treatment for drunkenness claim that the decrease in the production of distilled spirits, amounting to fifty millions of gallons, as shown by the statistics of 1894 and 1895, is due to the "cure." But the constant increase from year to year shown in the consumption of mild beer by the American people furnishes, I believe, a better explanation of the decrease in the use of distilled spirits.

Counting our population at seventy millions, the amount of beer consumed represents fifteen gallons to every man, woman, and child for the year ending June 30, 1895. But only a small amount of the whole was consumed by the women and children, therefore we can say that our chief consumers were our fifteen millions of men over twenty years old,—or seventy-five gallons a year, equal to nearly one quart for each man for every working-day in the year. Still, many hundreds of thousands among our fifteen millions of men do not drink beer at all, and this will make the average still greater for the beer-drinkers. It is quite evident that beer is becoming rapidly the standard

drink of the American born, as much as that of our German population who love their ancestral ways of living. If the whole amount consumed was equally distributed among the whole number of men over twenty years of age, the quantity of alcohol in these light beers, even in a quart of the amber liquid, if consumed during each day of twenty-four hours, would not equal that in one gill of whiskey, the usual dram of the regular toper. Again, the most inveterate beer-drinker will not consume a quart in a few minutes of time, but he drinks it at intervals during the whole day, and there is seemingly but little effect from the amount of alcohol contained in the quart thus consumed. But the dram-drinker in his gill of ardent spirits gets this benefit of the alcohol in one drink; and if he repeats his potations half a dozen times a day, a very moderate allowance for the general toper, he gets more alcohol in his stomach than is contained in two gallons of beer, and very few Americans drink that amount of beer in a whole week's time. If the argument holds good that the beer-drinker has given up the ardent spirits for the beer, and this seems to be the case throughout the United States, we may expect soon to find great inroads upon the drunkenness that has cursed this country in the past.

Is a quart of mild beer a day too much for a vigorous and healthy man, and is this quantity trenching upon the border line of intoxication and intemperance? is the next question we must consider. Sup-

pose a man divides a quart as follows: one-half a pint to be taken at dinner, or with the heavy meal of the day, and three half-pints when he meets his friends in the evening in social converse, he gains in health rather than loses it by the indulgence, especially if he is in the habit of taking a light luncheon in the evening, when the alcoholic effect, in consequence of the food ingested with it, is scarcely perceptible. It must be understood, too, in this view of the case, that our mild American beers are vastly inferior in alcoholic strength when compared with the heavy beers of Germany or the old ales of England, indulgence in which to the amount of one quart a day is almost as fatal to the health as the indulgence in distilled spirits.

We are great as a nation in almost everything that pertains to the affairs of human life, and it may not be impossible that we have drifted in the past few years, almost imperceptibly, upon a change in our drinking habits, due to our great social habits of life, that will soon make us the greatest nation on the face of the earth as relates to temperance in drinking. The average of human life is now constantly increasing year by year in the United States, and simple philosophy teaches us that a legitimate effect must follow a given cause. If every man in the United States over forty-five or fifty years of age—and our principal whiskey-drinkers are those who commenced this social habit a generation ago—could be removed in a day from our population

how quickly would be witnessed the diminution in the manufacture and sale of distilled liquors ! The present generation is satisfied, it seems, with our mild American beers, as the consumption of one billion gallons shows in the last year ; and it is plain that if man must have some stimulant in his drink, he gets the minimum of alcohol and is satisfied with it in the moderate use of American beers.

It is a well-known pathological sequence with the habitual user of ardent spirits that as soon as he passes the meridian of life, say from forty-five to fifty years of age, the kidneys take on changes due to the alcohol, and that, unless a reformation is made in his habits of life at this climacteric period, disease of the kidney, most commonly fatty degeneration of the organ, or that form of disease so ably described by Dr. Bright, soon terminates the earthly career of the individual. He may survive several years after middle age, but he is an invalid to the day of his death.

In this connection I will here relate what I conceive to be something remarkable in relation to disease of the kidneys among our surviving soldiers of the late war from 1861 to 1865. About two millions and a half of soldiers enlisted during the four years of this war. After thirty-one years, since the close of the war, about one-half, or say one million and a quarter, of these soldiers still survive. Nearly all of these are already pensioned, or are applicants for a pension. We have, all over the

United States, about twelve hundred boards of examining surgeons, who examine these soldiers thoroughly for the wounds and diseases from which they suffer, and their findings are made up on certificates and forwarded to the Pension Office for consideration and action. In the last ten years of my connection with the Pension Office as Medical Examiner, I have personally reviewed perhaps not less than two hundred thousand of these certificates, representing as many surviving soldiers; and while nearly every one has some disease of the chest and digestive organs, in addition to the results of wounds and injuries received in service, *not two per cent.* of the whole number show any disease of the kidneys. This speaks well for the temperance of these survivors as far as distilled spirits are concerned, or a different showing would be made by the examining boards throughout the United States. This fact proves that the surviving soldiers as a class of men have been free from the *excessive* use of ardent spirits since the close of the war. But who drank the one billion gallons of American beer used last year? The one million and a quarter surviving soldiers compose nearly one-tenth of the adult male population of the country, and it is presumed that they drank their share of the amount, without any disastrous results as far as the kidney organs are concerned.

The kidneys are the great excretory organs in the human system, while the liver, lungs, and skin bear

intimate reciprocal relations with the kidneys as depurating organs. It has been shown that a healthy man can consume two ounces daily of alcohol without injury to any vital organ, but excess of this amount in beer even would be dangerous. To consume two ounces of alcohol daily a man would require to consume *over* a quart, liquid measure, of light beer as made by the American brewers. In addition to milk, coffee, tea, and water, a common man would seem to have enough liquids if he even drank a quart of beer through the day to supply all the wants of his nature. The beer, perhaps, is not needed in his physical economy, but he drinks it, nevertheless, because it is cheap in price, is palatable, and satisfies his thirst. He drinks at a time twice as much beer as he would water, because of the palatability of the liquid and the slight alcoholic good feeling it engenders. If he drinks more liquid, including beer, than his system requires, what becomes of it? The excess in the main passes through the kidneys. The kidneys, anatomically, are composed of minute straight tubes, in diameter not exceeding a fine hair, through which the urine constantly passes, and these tubes oftentimes clog up, especially if a person is a consumer of highly concentrated food, and the result is pain in the small of the back, and after a time, if we analyze the urine, we find that disease of the kidneys has commenced to show itself. How quickly are our patients so afflicted relieved when we send them to some



celebrated springs, where they necessarily drink *twice* as much of the water of the medicinal springs as they did of ordinary water at home. The kidneys in the earliest stages of disease were washed out, as it were, and the congestion in the small of the back was relieved by this excess of water drank.

The old soldier, as a rule, is a thirsty individual, because the time was, thirty years ago, when his canteen was his best friend on the long march, in the skirmish, and on the picket line; and if now, in his old days, he satisfies his thirst with a daily portion of beer, in addition to other household liquids, who dares deny him this little comfort? We know that the old soldiers as a class are not addicted to alcoholic excesses from the use of ardent spirits because they do not show the telltale results in disease of the kidneys.

Is the consumption of mild American beers a promoter of temperance as relates to the use of alcoholic drinks of all kinds, or is it not? I leave the subject with the readers of this chapter, in connection with the one on distilled spirits—alcohol. Facts are stubborn things to combat, notwithstanding our prejudices often lead our best judgments astray. If, as stated by Pareira, the practice of taking a moderate quantity of mild malt liquor, of good quality and free from adulteration, at dinner, is in general not only unobjectionable but beneficial, we know that whatever is of benefit to the human system tends to prolong the life of the individual. As

it is our purpose to instruct men and women how to live longer and healthier lives, the advice of Pareira cannot be gainsaid in this connection, never forgetting the paramount truth, however, which no one can deny, that temperance in all things, as well as in drinking beers, makes the happiest and longest life that the human being is capable of attaining on this earth. Excesses of all kinds, whether in eating or drinking ; too much work, and not enough recreation and sleep, will bring disease to the body and shorten life. We have been endowed with the power of will, and we can make or mar our health as we exert that will in a given direction ; and he is nearest right who acts in all things as God gives him the power to see the right. When he conforms himself to what he conceives to be right and best for him, he gets out of life all the good that is possible.

## CHAPTER XIV.

### TOBACCO.

TOBACCO is a drug, and, like alcohol and many other drugs in the Pharmacopœia, an excess in the use is poisonous to the human system. When used in moderation it is harmless, to say the least, while many writers attribute to it many beneficial qualities. As with many other poisons of variable action on different individuals, much depends upon the temperament of the habitual user of tobacco. "What is one man's meat is another man's poison" is an old adage, quite applicable to the users and non-users of the weed. There are not many persons in the world whose idiosyncrasy against the use of tobacco was as great as that of King James I. of England, but there are many persons in every community who detest the fumes as significantly as did King James, and whose lives are not shortened a day by reason of exemption from the use of the drug.

Medically considered, tobacco first stimulates, then paralyzes the motor nerves. When used in excess strychnine is the antidote. This is an evidence of its poisonous nature, when a greater poison can be used to counteract its influence if taken in excess. The active principle in tobacco is nicotine, a very

rank poison when isolated from the plant, and a very small quantity of it is fatal to human life. The excessive smoker or chewer of tobacco has often felt the action of nicotine when the pale face, cold sweats, and feebleness of circulation have warned him that he must desist for a time from indulgence in its use. In smoking this weed the products of combustion are pyridine and collidine. When smoked in pipes the pyridine predominates, and when smoked in the form of cigars, where there is free access of air, the product is mostly collidine, which is by far a less active poison than pyridine when inhaled or swallowed. The toleration point, or the point where safety and danger part company in the use of tobacco, varies with the temperament of the individual, and cannot be defined to as definite a limit as in the use of alcohol. Instances are common where persons have lived to a very great age who were inveterate users of tobacco in some form. The reason of this lies in the fact that long usage has produced a force of its own in the human environment, due to the nitrogen in the plant,—a life-giving element, by the way,—that overbalances the poisonous results of nicotine and the products of combustion. Cessation from the use of tobacco with these inveterate consumers will bring on nervous disturbances simulating delirium tremens, which proves that the daily use of the drug had become one of the ordinary every-day forces, and with an established equilibrium with the correlation of the natural forces

of the general system, and one which should not be arrested if the person has advanced to or passed over the climacteric period of life. The use of tobacco in the form to which he has been accustomed through life is then absolutely essential to the old man, and the sudden withdrawal of this new force in nature would undermine the other forces and shorten the life of the aged.

Tobacco chewing stimulates the salivary glands of the mouth and the flow of saliva is increased, not to aid digestion in lubricating the food before it goes to the gastric juice of the stomach, because this excess of tobacco-stained saliva is squirted out indiscriminately over the face of the earth or into cuspidors in fashionable society, with indescribable loathing on the part of all non-consumers of the weed. The insects and bugs in the garden-paths and highways, with the instinct of insect life, flee from the squirts of tobacco juice as from the flames of the destroying angel; and if the toddling human infant in the way should receive one drop of this liquid in the eye, howls of pain would pervade the peaceful air of the neighborhood. If the chewer happens to swallow a little of this liquid, what a commotion and a spluttering ensues all the way back from the stomach to the nose and the mouth! and if he swallows a whole mouthful, pandemonium reigns supreme until the sensitive mucous surfaces of the throat and stomach have discharged every atom of the nauseating dose.

Tobacco chewers can sustain hunger longer than non-chewers. This is reasonable to believe. In addition to the nitrogenous element in tobacco, which the user absorbs for all it is worth, the excess of saliva necessarily retards digestion by using it for the purpose of expectoration instead of digestion, and therefore the food in the stomach, minus its proper supply of saliva in lubrication, remains longer in the stomach before the gastric juice and pepsin can perform their additional burden of work imposed by the want of saliva. How can such a habit prolong life, except, as before stated, where a man has passed over middle age and an extraneous force has been created that cannot be destroyed or broken without danger? It should be expressly enjoined upon parents to prohibit their boys from the use of tobacco in any form while growing and until the full power of the nervous system is established, as in manhood.

The ancients did not have the tobacco-habit to contend against in their civilization. We can imagine what the Spartans would have done had tobacco been discovered and its use become general in their day. Heroic legislation would, of course, have been enacted against its growth, manufacture, and importation.

Yet as a drug and a medicine, tobacco, like alcohol, has its important place. The vapor of burning tobacco has a sedative effect upon the lungs, and in relieving spasmodic asthma it is invaluable. With one accustomed to smoking, tobacco has a soothing

effect upon the nervous system, and in mental work acts as a stimulant to the brain, especially in mental work requiring the exercise of the reflective powers. Smoking after breakfast relieves constipation and favors the peristaltic action of the bowels by exciting the motor nerves.

Smoking to excess is injurious, like all other excesses in eating and drinking and general habits of life. The sight is often impaired by inveterate smoking. It will cause irritation of the throat, hoarseness, dyspepsia if much expectoration attends smoking, and a characteristic rhythm and palpitation of the heart called smoker's heart. This condition of the heart is attended with pallor of the face and feeble circulation, and is more noticeable in boys who are addicted to the abominable cigarette-habit. The cigarette always leads to excesses in the use of tobacco, because of the small amount of tobacco in one and its quick combustion; but when one is multiplied by dozens in the course of the day, the boy and young man are, in the short period of a year or two of constant indulgence, injured for the remainder of their lives as far as the nervous system, digestive organs, and heart are concerned.

To sum up the question of tobacco, the full-grown man is not injured by smoking well-cured tobacco, provided he learns to smoke without expectoration and smokes in moderation. The chewer of tobacco is injured, in the main, by his loss of saliva, which, as we have seen, is a great factor in digestion. Boys,

until they attain their full stature and development, should not be allowed to taste or handle the drug.

#### DO NOT LET THE BOYS USE TOBACCO.

Cigarette smokers inhale the hot, dry smoke into the bronchial tubes, and soon it will be found that the respiratory organs are incapable of performing their functions, and this affects nutrition. The weakness in nutrition, in addition to the poisonous nicotine in tobacco, at last affects the nervous system and brain, and the boy loses all will-power over himself. The evil of cigarette smoking with full-grown men is more serious in results than cigar smoking, because one cigar suffices, while the smoker of cigarettes is continually lighting them and inhaling the injurious smoke back into the mouth and through the nostrils. The cigar smoker does not, as a rule, smoke his cigars in this way. If cigarette smoking is injurious to full-grown men for this reason, how much more dangerous is it to the youth who has not reached manhood! The *New York Medical Journal* a short time ago made this announcement:

“In an experimental observation of thirty-eight boys, of all classes of society and of average age and growth, who had been using tobacco for periods ranging from two months to two years, twenty-seven of them showed severe injury to the constitution and insufficient growth; thirty-two showed the existence of irregularity of the heart’s action, disordered



stomachs, coughs, and a craving for alcohol ; thirteen had intermittent pulses, and one had consumption. After they had abandoned the use of tobacco, within six months one-half were free from all their former symptoms and the remainder had recovered by the end of the year."

## CHAPTER XV.

THE REALLY BEAUTIFUL WOMAN IS A HEALTHY WOMAN, AND SHE IS ALWAYS BEAUTIFUL TO THE END OF LIFE—HOW TO MAINTAIN HEALTH AND BEAUTY.

THAT health tends to the preservation of beauty of women as well as to long life is an axiom that proves itself, for the converse is equally conclusive, that delicate and sickly women cannot long preserve their beauty nor enjoy long life.

To have good health and to know how to retain it, and thus preserve her beauty even to old age, should be and is every woman's chief desire.

Every woman has a brief term of attractiveness in her first youth, by virtue of the freshness and bloom that youth bestows, and how sad it is to see that, in so many instances, as youth passes, so the beauty goes also, and in many cases, too, before the girl has in reality become a complete woman.

The old saying, "That a man is as old as he feels and a woman as old as she looks," is not always an indication of the real state of affairs. Many women look well, but their feelings belie their looks, because by the exercise of their great will-power they suppress the bodily tortures while gayly floating along in soci-

ety circles, but when at home and in quietude, give way to their sufferings or relieve them with anodynes more potential in injury to their health and beauty than the ailments from which they suffer.

In the Introduction to this work I have spoken of the evils brought on the sex in thousands of years past by the taper waist, and the victims of the habit of tight lacing can still be counted by thousands even as we stand to-day on the confines of the twentieth century of the Christian era.

Still, these misguided women accomplish their purpose, and live only to the maxim "that it is better to die and be out of the world than to be out of fashion."

While man, in his past history, has shown himself a slave to many vices, not among them was the mutilation and distortion of the figure to the false ideas of beauty.

The main points to be considered among society women are a fine figure and a handsome face. The handsome face goes always, and is noticed everywhere; but where does the fine figure come in, except at the behest of fashion and at the expense of good health?

The figure is susceptible to training to conform it to the sensual taste, but the handsome face is a God-given attribute. Hence a slim waist, big hips, and a broad, full bust must be manufactured to satisfy the prurient taste of the on-looker or a dude of a husband, and the poor woman, as soon as her butterfly-

days are past, is nothing more than a human female bundle of aches and pains. We hear it related of one dude who compelled his wife to wear corsets both sleeping and waking, the object being, of course, to make her look like the wood and plaster models displayed in the shop-windows.

But the day is passing when the made-up woman will much longer set the fashion, and the health of woman will be taken into consideration, notwithstanding the fact that her ancestors on the maternal side have for three thousand years or more inflicted upon her an unnaturally slim waist, not conformed to the model of Eve, the mother of the race.

Fashions in form and figure change somewhat in every generation, but it is strange that the fashion set by the Grecian courtesans of thousands of years ago, of slim waists and large hips, remain paramount still as the types of beauty in form. Yet if these same devotees of fashion in form would only visit any celebrated art gallery they would there see, in bronze and marble, the ideal Grecian lines of form and figure that prevailed before the degeneracy of the later days of the Grecian empire.

It is needless to state that good health cannot be maintained if the small or the unnatural waist of woman is made still more unnatural by tight lacing through her years of life after attaining womanhood. Nature cannot stand the strain and something must give way. One might just as well, without breaking the eggs, force two dozen in a

basket made to hold only one dozen and a half and expect them to be free from breaks, as to expect the woman to be free from aches and pains while continuing such a practice. To keep her health and beauty a woman should resort to work and exercise, and this will expand the slim waist and forbid tight lacing, for of course work and healthy exercises are incompatible with tight lacing. "Work is restful to the body. Idleness and the constant pursuit of pleasure for the sake of pleasure is simply paralysis of life, and soon develops premature old age." From this truism we assume that mental and physical idleness in the life of a woman means also loss of beauty.

Dr. Weir Mitchell on this subject states, "I think it fortunate when women are so situated as to have to do things about the household which exact vigorous use of the upper extremities. Nothing is a better ally against nervousness and irritability in any one than out-door exercise or pretty violent use of the muscles."

The non-use of the arms has a bearing on the general health of both men and women. The development of the muscles of the arms increases the capacity of the chest, and with this a corresponding increase in the tissues of the lungs, and hence a greater area for the oxidation of the blood. Exercise will give to the arms that rounded form so highly prized in woman, and exercise of some kind will cause perspiration, and without the exercise of this function of the skin a woman cannot long maintain her health and beauty. The perspiration carries off the

waste from the body that must be thrown off in some way, else she will suffer from sallowness of face and obesity. The inactive, lazy woman grows fat, but if she daily uses her arms and shoulders freely by work or exercise in the house or in the open air, instead of riding in her carriage, she will find that fat does not accumulate. But whenever she finds that in spite of all her efforts obesity begins to gain the ascendancy, she must look after her diet as well as give attention to daily exercise. In this condition in a woman's life the hot vapor-bath once a week is of great benefit, provided that up to this period of her life she has escaped any serious disease of the heart. This she can readily learn from the family physician, and, if suspected, the hot vapor-bath should be indulged in with some caution.

Because of the in-door life of the ordinary woman, frequent changes of under-clothing and tepid-water bathing and rubbing with a towel (when the means of full bathing is not easy) every day of her life is more essential to her health and its attribute, beauty, than it is to the active man, who, in the open air and sunlight, receives the potent effects of both elements. If the woman is weak and anæmic, the greatest tonic in the world is cold-water bathing or rubbing with the towel,—commencing at first with tepid water to avoid shock to the system, and lowering the temperature of the water gradually until there is no suffering in the application of the cold water or immersion of the whole body in a bath.

How many of the ills that the human female flesh is not heir to, but which have been brought on by carelessness and want of knowledge of herself, could woman avoid and cure by the judicious use of the great tonic, cold-water bathing !

TRAINING OF GIRLS—YOUNG WOMEN WHO HAVE  
THE APPETITE OF GOATS AND THE REASON  
FOR IT.

The domestic hen, when she scratches the gravel for her highly concentrated food, such as worms, larvæ, and seeds of all kinds, now and then swallows a piece of gravel to assist her digestion. The school-girl consumes pickles, slate-pencils, blue clay, chalk, ashes, etc., to meet a craving of nature. If the diet of the girl had been other than concentrated food, and if the attentive mother knew that her child needed good, wholesome food for growth and development, and enough of it for nutrition and growth *and waste as well*, which I have so often before stated is absolutely essential to health, the depraved desire for chalk and slate-pencils and the wasting away of the saliva by gum-chewing would not be witnessed. Our boys, by active exercise and their predatory habits, supply the wants of nature, but our girls do not have such chances. These desires for waste substances are natural cravings among all children who eat only concentrated food ; and if the food is not *mixed* after adult life, and the concentrated food only is maintained, desire for

stimulants, with other evil habits, soon comes into the life of the individual if the will-power is not exercised against the craving.

Mrs. Frank Leslie states "that thousands of men in the trade in this country have made fortunes by the manufacture of material with which so many of our girls have ruined their digestion, their appetite for wholesome food, their teeth, their manners, and their beauty." This nibbling and eating of sweets at all hours of the day and night is enormous, and, aside from the substances in them which injure digestion and destroy the appetite for wholesome food, the sugar which forms their bulk is highly concentrated food, giving to the system not one element of waste. Eat regular meals, make your combination of food mixed so as to provide for the requisite nutrition and waste as well, abjure in a measure the use of sweets and candies or dispense wholly with them, and you, ladies of the household, all other things being equal, will always maintain your health and beauty. Yet I would not have you ignore these sweet things altogether, but use them judiciously, and not at the expense of the substantial diet you really need through life.

SLEEP AND REST ESSENTIAL TO THE PRESERVATION OF HEALTH AND BEAUTY AND LONG LIFE OF WOMEN.

The fashionable lady who becomes "too tired," in the round of her social duties, to take the proper



exercise for the maintenance of health is to be pitied. She has added to her general anatomy not a single element that stands for the conservation of her health and beauty. Her sleep from this "too tired" feeling is restful, but not invigorating, and this is shown before the season of Lent by the hollow cheeks, sallowness of face, rings under the eyes, lackadaisical expression, and a general lassitude of muscle and feature.

Every woman who is in society knows what "beauty sleep" means. It means sleep before midnight. No further comment is necessary to prove the virtue of this definition. Disobey it, and the youthful beauty that all women prize highly will soon disappear. Sleep in the afternoon will check the ravages from unnatural sleep in the long hours of the morning after sunrise, but sooner or later the dissipation will inevitably tell upon the beauty and health, because this habit necessarily infringes upon the hours of physical exercise, upon the home duties, and the general functions of a healthy life, including, of course, regularity in meals, etc., and out of this dissipation come nervous prostration and serious bodily ailments that make her a prey to the services of a medical specialist for the remainder of an invalid life.

The schools for girls are providing better instruction in the way of correct living in order to preserve health and beauty, and a long life with it, but home instruction, after the giddy school-days, will do more

to bring about a reformation in the mode of living than all the lessons taught at school.

Woman must suffer some of the results of the disobedience of the laws of nature before she can fully realize the dangers that lie before her, and such a woman can be the only successful instructor of her daughters.

Sir Andrew Clark, one of the celebrated English medical authorities, states,—

“The anæmia of girls is caused by feculent retention and its consequences. The girl becomes self-conscious, thinks of her appearance, and tightens her waist. Afraid of getting fat, she stints herself in food and eats only dainty things. She omits the daily relief, because not prompted to it by the necessary waste that should be contained in the food she eats, and so it happens that, through the compressed waist, the insufficient food, and the disregarded desire, there come accumulations and obstruction in the digestive organs and bowels, and these accumulations, however small, undergo putrefaction, evidenced by sore lips, slight eruptions, black heads, and the so-called beauty-spots on the face. Absorb this poison also in the blood, and chlorosis and an anæmic condition is the result.” And it may be added that typhoid fever prematurely ends the life of the young woman.

The mother should understand these simple facts, and when she does she becomes the best teacher her daughter can have.

## THE EVIL OF NOVEL-READING.

The mischief of voracious novel-reading can be likened to the drink-habit. It tends to make all other literary nourishment intolerable, just as dram-drinking tends to make all true food intolerable. The genuine novel reader detests tame stories. She wants always to be feeling a thrill of excitement running through her nerves,—always to be living in imagination through the perils of the hero and heroine of the story. No state of mind can be more unwholesome, because none is more calculated to divert the energies from the tasks of daily life, and her own personal wants relative to diet and bodily comforts, and the general results witnessed in time, if the evil is continued, are a general weakening of any power to enter into and be a part of the solid interests of real life ; and the health suffers, of course. Temperance in the reading of novels is as great a virtue as the abstinence from other vices is to the general constitution of a girl or woman.

## THE COMPLEXION OF WOMEN.

The complexion of a woman is almost always an index to her general health and the telltale of many ills. Bright eyes and a good skin go very far to make up the beauty of women. These she can attain easily by keeping the skin clean and open, using for the face hot water daily, and rubbing with soft towels both face and neck, with the finest of

toilet soap she can secure. At the same time she must use the tonic, tepid and cold-water baths, or sponging daily of the whole body.

Sallow complexions, in addition, need the attention of the physician to regain the natural hue, since these complexions indicate torpor of the liver or some error of the digestive functions to correct; but before resorting to very much medical treatment, especially if the natural functions of the body are maintained, it will be well to try the effect of sunshine, bathing, and out-door exercise or work. In this connection, the bicycle is a wonderful restorer in bringing back to the face its natural bloom and color. It gives both the work and exercise out of doors that are needed, and the sunshine does the rest. Open-air games, like croquet and tennis, will do the same office. Any exercise that will call into use the upper extremities develops the woman and gives the healthy hue to the natural complexion, while at the same time her appetite is increased for nourishing food to provide the requisite vigor and natural waste induced by work or its equivalent in rational exercise. Cosmetics are only masks to disguise the ravages of some error in living, and, besides, the chemistry of the preparation must from the very nature of the case injure the pores of the skin in time, no matter how well recommended by actresses and ladies of fashion. Shut up these pores of the skin—of the face or of the body—and death of the skin must follow. Not only death of the skin, but, the natural avenues of

excretion of waste being closed, the poison must remain in the system to work mischief to the general health.

The best and only cosmetic for any one to use is plenty of water, plenty of hard rubbing with the hands or towels, and very little of the very best toilet soap that is manufactured.

FRET, WORRY, AND PASSION, ESPECIALLY AMONG WOMEN, DERANGE THE HEALTH, SHORTEN THEIR LIVES, AND ARE FOES TO THE PRESERVATION OF BEAUTY.

It is well known among medical men that violent fits of passion, fretting, and worrying will arrest and change the various organic secretions as suddenly as a shock from an electric battery. Sudden fright acts also in the same way. A paroxysm of anger will either start an active flow of the biliary secretions or cause them to cease. Grief will stop the secretion of the gastric juice in the stomach and the sufferer will take no food, the desire of hunger ceasing therefrom.

The great essential among all our human attributes is self-control, and it is most important in order to conserve the health of woman, who, as a rule, is more sensitive to emotion than man. All of us should make it a study to acquire self-government. It may require long and patient discipline and will cost much self-denial. It may come through bitter trials and experiences, and it may be that in many cases

a great part of the life is spent in disappointments, troubles, and crosses before the mind becomes at peace with itself. Many eminent medical men have expressed the opinion of the value of real personal religion as an agent for the preservation of health and long life. A firm belief in the doctrines of any religion has great value in sustaining life, and this is the reason that we find among theologians, as a class, those who stand at the head of the list among long livers. As Robert Browning beautifully says, "Trust God, see all, nor be afraid;" and as Shakespeare before him said, "That life is better life, past fearing death, than that which lives to fear." And, again, he says, "Let us dream of unhappiness, but wake up laughing."

Happy are they who, free from the fret and worry of every-day life, have schooled themselves into a peaceful condition and have learned the philosophy of complacency, in adapting themselves to the invariable laws of the universe that they cannot successfully oppose nor change. That unhappy disposition which looks upon all the little and great crosses, trials, vexations and worries that are incidental to human existence, and are in the pathway of every individual, as matters for fault-finding, fretting, and scolding, can never enjoy good health and long life, and while such persons live they aggravate the very evils of which they complain and make uncomfortable every being with whom they come in contact through life.

## PHYSIQUE OF THE COMING WOMAN.

The ideal woman of the future must be one of strong physique. Sir Bulwer Lytton said, "The match for beauty is a man, not a money-chest." Equally true is it that the match for the ideal man—the coming twentieth-century man, who has learned how to live—is a woman, and not a bundle of aches and pains, but one who will have learned also how to live. Woman will not have gone far in her quest of supreme health before she will have discovered that her dress is a fetter self-imposed. She must cast off her slavery to the fashion-plate, and go back to the freedom and grace of the Greek ideals instead of the form and figure invented by the degenerate Greeks for the benefit of courtesans, shop-keepers, and model-makers.

The stately Venuses of antiquity, with their loose girdles and flowing lines of drapery, will be her models in dress; and she will also be strong mentally, pure in soul, and in every sense the equal of the best of the race of men on the globe.

## CHAPTER XVI.

### SUMMARY.

“How old art thou?”—*Genesis* xlvii. 8.

“So teach us to number our days that we may apply ourselves unto wisdom.”—*Psalms* xc. 12.

ANY person between the ages of fourteen and seventy can profit by a close perusal of the foregoing pages. When a review of life is taken by any one the least familiar with the general laws of health, it will be found that on the winning side of the match for health and longevity will be those who live carefully and in an orderly fashion.

Is longevity worth striving for? Certainly not, if old age finds us weaklings and a burden to ourselves and others. Therefore, if our aim be to secure the longest life attainable and enjoyable, not many years of our earliest manhood should be allowed to escape without severe attention to the habits of life. When much past the meridian of life it is too late to change the evil habits, that have become a second nature, without disturbance of some of the healthy functions that have become accustomed in a measure to the condition established by those evil habits. In these cases, as instanced in the use of tobacco, long usage has produced a force of



its own in the human environment. It is only while one is young and vigorous that the foundation is laid for a healthy, *long* life. But it cannot be denied that many cases of very old age have been gleaned from the histories compiled by the students of longevity where great liberty was taken with Nature without the usual punishment for infringement of her sanitary laws. These, of course, were exceptions to a general rule, that those who live carefully and in an orderly fashion are the winners in the race for longevity and the health that should attend old age.

Chevreul, the great French chemist, who died in 1889 at the age of one hundred and three years, was a philosopher and a student of hygiene as well as a chemist of acknowledged distinction. In his life he showed the world that it was possible, by living rationally, eating nourishing food and abstaining from excesses at table, refusing to let anything excite his passions unduly or the most pressing cares of business interfere with the amount of sleep and rest which experience had proved to be needful for him, to become more than a centenarian, and yet at one hundred years of age to have every faculty in working order.

A century of life in Paris! A century of super-human excitement and strife! A human bridge from the time of Louis XVI. and the great French Revolution to the third republic in France! He was to the last a student of science, and extreme old age did not impair his intellect or memory. His whole life

is represented to have been very simple but regular, and he was ever on the alert against errors in living. For some years before his death his diet consisted of two eggs, a small chicken pasty, and a pint of *café au lait* for breakfast; and for dinner, tapioca soup with grated cheese, a small cutlet, a bunch of grapes, half an ounce of cheese, and three glasses of water. He always abstained from the use of wine.

The Psalmist says, "What man is he that desireth life, and loveth many days, that he may see good? Show me the path of life; in it is fulness of joy. With long life will I satisfy him and show him my salvation. So teach us to number our days that we may apply ourselves unto wisdom."

A calm estimate of the value of long life is made amenable to our knowledge and wisdom. Moses lived to be a very old man, and in his old days gave the advice that he knew was essential to a happy and a long life. Yet he was one in the range of human history who had the burdens of his people to carry through a long life, and therefore could not live for himself alone. With a life burdened and harassed with the weight of his people's afflictions, still he knew the "fulness of joy" in a long life.

Ex-Senator Ingalls, of Kansas, in an obituary address on a deceased colleague in the Senate of the United States, said, "We are all under the sentence of death. Other events may or may not occur. Other conditions may or may not exist. We may be rich or poor; we may be learned or ignorant;

we may be happy or wretched ; but we all must die. The verdict has been pronounced by an inexorable decree of an omnipotent tribunal. Without trial or opportunity for defence ; with no knowledge of the accuser or the nature or cause of the accusation ; without being confronted with the witnesses against us ; we have been summoned to the bar of life and condemned to death. There is no writ of error or review. There is neither exculpation nor appeal. Beauty and deformity, good and evil, virtue and vice, share the same relentless fate. The tender mother cries passionately for mercy for her first-born, but there is no clemency. The soul helplessly beats its wings against the bars, shudders, and disappears. The proscription extends alike to the individual and the type. Nations die and races expire. Humanity itself is destined to destruction and extinction. At some time in the vast future the last man on the earth will perish, and the sun will rise upon the earth without an inhabitant, and our planet will be an idle cinder uselessly spinning in its orbit. Even now some world in the firmament dies, unnoticed by us ; some sun smoulders to embers and ashes on the hearth-stone of infinite space."

Dean Swift wrote of death as follows : "It is impossible that anything so natural, so necessary, and so universal as death should ever have been designed by Providence as an evil to mankind."

This is really the condition our knowledge and wisdom teach us. This is the condition of the world

in which we find ourselves placed ; this is the condition of human life as we see it practically exemplified day by day as long as we live, and we know the truism that it is just as natural to die as to be born and live. The changes of life and death make the harmony of the universe, and there can be no re-creation or resurrection without death and decay. One follows the other in logical sequence, and the final postulate proves itself. There can be no annihilation where re-creation is necessary to conserve the harmony. There are changes in form and in matter, but not one jot or tittle can ever be finally destroyed. We are born into this world under these conditions, and we finally go out of it at the end of life under precisely the same conditions. Who would change if he could this inexorable law of the universe? We should feel happy that our knowledge and wisdom have enabled us to understand the law against which there can be no appeal, and should be none, to mar the harmony of perpetual existence, with life and death only as incidents of this perpetuality.

But what has this knowledge to do with our desire for the longest life attainable on this planet, with health and reason and consequent enjoyment while we live? Simply this, and nothing more: if we shorten our lives by our own wilfulness we alone are the sufferers; there can be no chaos by reason of our shortcomings. Decay and death come sooner to us who appreciate human time, but this time of ours holds no relation to the universe and the laws of

infinity. As far as the physical law of life and death is concerned, the child of a hundred hours' duration in this world lives as long as the centenarian. The question for us to ask ourselves is, Inasmuch as we have been born into the world, would we prefer not to have been born at all, or, when born, live out our allotted time in the way and manner that our knowledge and wisdom point out to us can be achieved with the best possible results? "Men must endure their going hence even as their coming hither." Man cannot control the coming or the going, but when in the world, and the care of parents has caused him to escape the perils of infant life and enabled him to reach the years or time of wisdom, the latter becomes a factor in life, and if properly directed for his own benefit can be the faithful mother of his adult life to prolong the going hence to the farthestmost limit of allotted human life. The right to live as long as we can is an inalienable right, and the joy and happiness of living depend upon ourselves. This inalienable right permits us the right to make or mar our joys and our pleasures, our physical and mental delights, and to make existence an earthly exultation or a brief life of remediless woe and physical suffering. Which do you prefer? And how old art thou?

"It is reported concerning Socrates that, when Athens was destroyed by the plague, he, in the midst of all the danger, escaped untouched by sickness, because, by a spare and severe diet, he had

within him no tumult of disorderly humors, no factions in his blood, no loads of moisture prepared for charnel-houses or sickly hospitals; but a vigorous heat, and well-proportioned radical moisture; he had enough for health and study, with philosophy and religion enough for the temples and the academy, but no superfluities to be spent in groans and sickly nights."

Cornaro, a member of one of the illustrious families of Venice in the fifteenth century, lived to be ninety-nine years old, and his example is often quoted by writers upon longevity to prove what will-power can do to bring about a reformation in the habits of life. After living a fast life for thirty-five years, he gives his own history as follows:

"I was terribly afflicted in my fortieth year, had tried all remedies fruitlessly, and the physicians told me that there was only one hope for me, and that was to lead a sober and orderly life. I find that temperance preserves even old men, and even sickly men are sound compared to what I am. So I resolved to follow temperance and reason, and within one year I found myself cured of all my infirmities." His physicians advised him as to the general rules for the restoration of his health, but he was left to his own judgment to discover what particular article of food and the requisite quantity that best agreed with him. He writes, therefore, as a result, "No man can be a perfect physician to another, but to himself only." His whole day's meat and drink that best

suiting his healthy wants were twelve ounces of the former and fourteen ounces of the latter. As years advanced to the centennial point he found that the quantity should be decreased. He did not neglect physical exercise every day of his life, and at the age of eighty-three years said of himself, "Life at this age is not a dead, dumpish, and sour life, but cheerful, lively, and pleasant." His death, at the century mark, was in his arm-chair at Padua, and was accompanied by no physical agony or discomfort.

I cite the examples of Chevreul, Soerates, and Cornaro merely to show what can be accomplished by the proper use of the will-power when exercised in the constant pursuit of action to secure perfect health and the resultant long life to the individual. The habits of the civilized races of men for several thousands of years have tended to shorten human life, but it is now absolutely certain that through a better knowledge of the physical constitution the tide has turned, and the averages in the duration of human life will increase year by year for many years to come. The census of the United States taken in 1880 showed that in a population of fifty millions of people four thousand and sixteen attained the age of one hundred years or over, or about one in every twelve thousand inhabitants.

The number of centenarians, as shown by the census of 1890, had increased a little above the ratio of increase in population. In the same ratio,

it was shown that more people attained the ages of seventy, eighty, and ninety years than in the preceding decade, and it is reasonable to suppose that this ratio will continue to increase. The reason of this is that our people are being better educated in the manner of taking care of their physical bodies; the cities and towns have been brought under better hygienic and sanitary conditions than they were a generation ago. The subject of a good water-supply for our cities and towns has been thoroughly canvassed and has produced a good result everywhere, except in newly-settled places and in the city of Washington, where, from a mistaken policy of economy, our national rulers, who govern the capital of this great nation, do not consider the situation as well as would a board of common councilmen of any city. Hence the people of Washington, after a rain, are either compelled to go dry, drink beer, or swallow the remains of ancestral races, whose bodies ages ago were buried on the banks of the upper Potomac River. Like Cæsar's body, dead and turned to clay, and used to fill a hole to keep the wind away, the bodies of King Powhatan and Pawtawmack and their numerous tribes, now turned to clay, not only make the brick of which the houses are built, but form part of the water that comes to us for drinking and bathing purposes. It is not sudden death, of course, to drink this water, but at the same time our alimentary canals and urinary organs would be better without this semi-liquid diet off a



long ago dead Indian. It is believed that a better water-supply for the capital city of the nation than now exists—in the year of our Lord 1896—will be soon inaugurated, but, in a city of over a quarter of a million of human inhabitants, what arithmetician can reckon up the numbers of years lost to the citizens who have been in times past compelled to drink and use the vile Potomac water?

Then, too, another factor that has operated to increase the average of human life in the last half-century is our better and more successful treatment of infection in disease by isolation, which stamps it out and prevents its spread. If we could all at once eliminate from our general population those affected with consumption of the lungs, the percentage of centenarians would be more than doubled. So, too, in relation to diseases of the heart. We cannot open our daily newspapers without reading of some distinguished citizen who has fallen a victim to heart-failure, and at the same time we know that a great many more, who are undistinguished in the political, social, mercantile, professional, and all other pursuits of life, daily fall victims to the same failure in the action of the heart which the daily newspapers do not herald. Yet, as a rule, the human heart, with its delicate organism beating one hundred thousand times in every twenty-four hours while it pumps pounds of blood to the arteries, was designed to run one hundred years and over, and to wear out only coincident with the decay of the other organic forces.

If we could eliminate these lung and heart diseases from the human race, more than one-half of any population would live to the full allotted age of man. The heart and lungs in the human body,—the lungs inhaling over fifty hogsheads of atmospheric air every twenty-four hours, and the heart in the same time pumping over two hundred pounds of vitalized blood to the remotest parts of the body,—these two great organs are really the main-springs of life, but we, as a rule, do not give them the same attention as we do to the main-spring of a valuable watch.

Then look at our general failure in attention to a healthy condition of the stomach and other digestive organs, the very furnacc-fires that set and keep the lungs and heart in motion and action. Starve the stomach and put out the fires of digestion, and the lungs and heart will soon cease to perform their appropriate functions. Overfeed and overstrain and misuse the digestive organs, and the heart begins to palpitate under the strain, while the lungs, under the unnatural pressure, will commence to wheeze. When a man owns a beautiful engine—costing him thousands of dollars, it may be—he seeks the experienced engineer to run it, to look after it, and to see that no extra strain comes upon its works of steel and iron. Is a man's own body of no more value to him than his high-priced engine that he proudly owns? To judge from the habits of life that some men and women follow day after day, it would seem that the thought of a better care of their delicate

physical mechanism never enters into their minds, and these are the men and women who live to-day and die to-morrow. Such persons will never receive the benefit of the Divine promise, "With long life will I satisfy thee."

"HIS DAYS SHALL BE AN HUNDRED AND TWENTY YEARS."—*Genesis vi. 3.*

It is thought by some commentators that this means the extreme duration of life, others that it means the average. Perhaps the latter is the true interpretation. Unquestionably, the duration of human life has varied in the lapse of ages, and we have instances to show this fact. Abraham lived one hundred and sixty-five years. Five hundred years later, Joshua, who was considered very old at the time of his decease, lived one hundred and ten years. An inscription on an Egyptian monument states that the extreme duration of life is one hundred and ten years. This was the exact age of Joseph.

Antediluvian times produced Methuselahs, as recorded, commencing from Adam, who lived nine hundred and thirty years, and Methuselah himself lived to be nine hundred and sixty-nine years of age. It is supposed by many that soon after the Creation, or at the time when the history of man commenced, when the air was free from infection, the soil exempt from pollution, the food of man plain, simple, and natural, and all the forms of dissipation

and evil habits were unknown, individuals attained an average age of four hundred years, the maximum point of longevity being nine hundred and sixty-nine years, as recorded of Methuselah. Without discussion of the subject whether the antediluvians set a larger value to passing time, it is sufficient to know that human lives are lengthened or dwindled to the shortest span by the social habits of nations and individuals.

But under every possible favoring condition of constitution, climate, food, and occupation, I can discover no natural or physiological law why a human being should not live twice as long as the average of human life at the close of the nineteenth century shows. If it can be proved that one person can live one hundred years or over, under the most favorable hygienic circumstances, we need no further evidence to establish the physiological law that all persons under the same favorable conditions can do likewise. However, the usual incidents and accidents of civilized life, as we have known it for several thousands of years, preclude the idea that the average of human life can much exceed one hundred years. This deduction is reconcilable only by the fact that reliable data, in many hundreds of the past years of human life, only show it as a fact. We cannot linger upon the discussion of the possibilities of extended human life when incontrovertible and incontestable data for many years show a certain fact. Facts are stubborn things. In all ages since

civilization has given us a history, we find that philosophers, divines, scientific men, and statesmen—in short, all who in their lives maintained the supremacy of the moral and intellectual powers—lived to an old age, but not much exceeding the one hundred years' allotment, and many fell short of this limit, some only by a few years. Among the ancients celebrated in history we find in this category Homer, Hippocrates, Pythagoras, Plutarch, Plato, Thales, Xenophon, Sophocles, Zeno, Galen, Democritus, and among the moderns Cornaro, Locke, Newton, Galileo, Boyle, Buffon, Blumenthal, Hahnemann, Swedenborg, Fontenelle, Chevreul, Sir Moses Montefiore, and hosts of others; and in the United States, as representatives of the past century, Chief-Justice Marshall, Thomas Jefferson, Benjamin Franklin, the elder Adams, John Quincy Adams, and James Madison. All of these persons were distinguished as active workers, and were really intemperate moral and intellectual workers, throughout their lives. The strain of life fell strongly on many of these men I have mentioned, who wrought not for themselves, but for humanity, and, if a few years' sacrifice in the duration of the natural allotment of life was their portion, we now know that under yet more favorable circumstances the limit of life allotted to every human being who cares for his body and mind would have been theirs also.

The avoidance of special errors in living upon lines specifically alluded to in many places in this

volume will promote health and its sequel of long life. Health is the prerequisite for longevity, and when we reach the position where freedom from disease is the rule of any society of individuals, and disease the rare exception, we are well on the road to the attainment of the longest life possible.

Colonel Robert G. Ingersoll was asked, on a particular occasion, whether he thought that he could have made things better if he had had the creation of them. He replied, "I would have made health catching instead of disease,"—a sententious reply, but when analyzed we find in it nothing but the idle words of a pessimist. A normal condition of absolute health was the gift of the Creator to every living thing. In the case of abnormality, or the incursion of diseases among men, man alone is to blame, having violated in the past or present some natural law, the transgression of which has brought the penalties with it. Avoid the violation of natural laws, and you will not "catch" disease nor "lose" the health that God from the beginning of man on this earth endowed him with. Colonel Ingersoll, if he should lose his pocket-book by his own neglect, would blame the Creator of the universe for his own carelessness, provided he believed in the existence of such a being.

The arts of commerce and the fine arts of cookery—or no art or knowledge at all in cookery—have been for centuries past the causes of disease in the human body and have lessened the average duration of human life. Stimulation to excess in food and drink,

the introduction of extraneous materials not essential to the health and comfort of the human being, concentrated food free from waste, leaving the abdominal organs nothing to work their chemistry upon, and causing the alimentary canal to become a sluggish stream breeding disease in its length of thirty-two feet, together with evil habits, have all contributed their share to make disease the rule in society and health the exception, and man is the only one to blame, because of his transgression and violation of natural laws.

It is related that in many parts of Ireland, where grain food is scarcely ever used, but where fish, potatoes, turnips, and vegetables form the principal part of the diet, the people are proverbial for health and longevity. The English consume meat and grain foods, and in comparison with the same external conditions of air and climate, although better clothed and housed, the average length of life we find is not as great. The use of fine flour, beef, ale, and plum-puddings makes the English people rugged and healthy-looking; but the lease of life is shorter than among the inhabitants of Ireland, who, by necessity, are compelled to be more frugal in diet. The reason for this showing lies in the fact that the "frugal diet" does not so much tend to the prolongation of human life,—for it has been shown that the longest lived have been those who have had the benefit of "comfortable living,"—but that this simple diet has in it elements that cannot be

wholly digested and absorbed, which act mechanically in assisting in the expulsion of waste from the bowels. The true secret of comfortable living hinges upon this fact that so many overlook, although particular as to the various items in the daily dietary. For perfect health with any individual this secret of comfortable living (and it should not long be a secret with any one, because it is knowledge of inestimable value) should be carefully studied and formulated by every intelligent person, who should, in this case at least, be a physician unto himself, to judge for himself how much concentrated food he needs every twenty-four hours, and thus correct and regulate his dietary with this one great and absolutely important function of health in view,—viz., to provide enough waste in the diet to keep up the healthy daily action of the bowels without the aid at any time of life of purgative drugs or other unnatural methods.

#### MEAT DIET.

Unquestionably, a mixed diet is the best for man, but a mistaken notion prevails that meat of some kind should largely enter into the same. As a consequence, our people eat more meat than is good for them, and more than can be properly disposed of by the digestive organs, or, if fully digested and absorbed by the vessels adapted to the purpose, it produces phenomena that may be characterized as stuffiness, lassitude, feverishness of skin, dulness,



predisposition to sleep,—in short, all the symptoms of overfeeding and gluttony.

Meat should not be eaten at every meal, and in hot weather should be eaten sparingly. Persons of sedentary habits should make their principal diet—especially in warm weather—on vegetables, fruits, milk, breadstuffs, and food of like character. If there is reason for the belief that the kidneys are diseased, a diet made up largely of meat is contraindicated. The kidneys are intimately concerned in the disposition of meat in the general system, and hence are overtasked when meat is used in undue quantities. The flesh of wild animals and birds is more tender and more easily digested than that of domestic ones. This is accounted for by the fact of the greater exercise they take, thereby renewing their flesh more rapidly than the animals and birds that lead a quiet life. Of meats, beef, of course, is the standard. Veal and pork are not so easily digested. Next to beef, mutton and lamb take their places as among the easily digested meats. Milk and cheese, containing the same chemical elements as meat, must not be overlooked in the dietary,—the latter, when sparingly used, furnishing an aid to digestion. “Cheese, the mighty elf, that digests all things except itself,” should be taken at the end of a meal for this reason. Milk, when found to be easily digested, furnishes a substantial element in the daily dietary for young and old alike, but its freshness and purity must be closely looked after, else severe

bowel and stomach derangements will be the result, especially in warm weather. In our cities particularly, where bad water is the rule, the milk in daily use will carry with it the bacteria that cause disease in any community. Even if the milk-cows are healthy, the water used in cleaning the cans that transport the milk to market may not be free from disease germs, and if a pint or so of this water remains in the cans, it will pollute the whole milk of that day's dairy. However, if the milk is free from any noxious element, there is not in our whole dietary a better substance for conserving the health and maintaining force and vigor in the human organism than is found in the lacteal fluid from a healthy cow, and it furnishes both meat and drink essential to the healthy maintenance of human life.

#### OCCUPATIONS OF MEN TENDING TO PROLONGATION OF LIFE.

Theologians of all denominations—those who teach and practise all the Christian virtues, and this means, of course, freedom from human vices—stand at the head of the list among those who live the longest. Even the teachers of pagan philosophy, long before the Christian era was established, enjoyed this length of life in comparison with their fellows. This is easily explained. Any tenets of religious doctrine appeal to the best elements in human nature, and the good against the evil in human life

is always paramount as far as health and longer life are concerned when the good attains the ascendancy over the evil. This admits of no argument to prove the predicate or postulate. Evil exists, and the tendency of all religions is to combat it, and if the warfare is a success the good preponderates. This is the reason why theologians, as a class, are at the head of the list among those who live the longest lives on this earth. But this condition will not embrace a class of pretended theologians, so common everywhere, who daily pray that the nerve-power of the stomach be made more enduring, that the taste for succulent food be made more keenly enjoyable, and that the appetite might be tempted with the fat of the land, so that they might live many more years, and enjoy all the creature comforts as they pass through a long life. These prayerful people, who, in the main, answer their own prayers, especially in a plentiful country like the United States, seldom live the average of human life.

True religion teaches self-denial and that a morbid craving for richer food and the indulgence in vicious habits of any kind is a longing for something we do not really need. This longing is a trait of the carnal soul in man which leads him to indulgence. But religious people, as a class, school themselves against these intemperate longings, and hence we see them at the head of the list of those who live the longest.

Rev. De Witt Talmage, in a sermon, the subject

of which was longevity, delivered in Washington at the beginning of the new year, said,—

“Religion, so far from subtracting from one’s vitality, is a glorious addition. It is sanative, curative, hygienic. It is good for the eyes, good for the ears, good for the spleen, good for digestion, good for the nerves, and good for the muscles. The fact is that men and women die too soon. It is time that religion joined the hand of medical science in attempting to improve human longevity. If the race shall be brought out from under the servitude of sin, what shall be the body? Religion has only just touched our world. Give it full power for a few centuries, and who can tell what will be the strength of man and the beauty of woman and the long life of all! Practical (real) religion is the friend of a long life, and I prove it, first, from the fact that it makes the care of our physical health a positive Christian duty. Whether we shall keep early or late hours, whether we shall take food digestible or indigestible, whether there shall be thorough or incomplete mastication, are questions very often deferred to the realm of whimsicality, but the Christian man lifts this whole problem of health into the accountable and the Divine. He says to himself, ‘God has given me this body and He has called it the Temple of the Holy Ghost, and to deface its altars or mar its walls or crumble its pillars is a God-defying sacrilege.’ He sees God’s calligraphy in every page, anatomical and physiological. An intelligent Christian

man would consider it an absurdity to kneel down at night and pray and ask God's protection, while at the same time he kept the windows of his bedroom tight-shut against fresh air; smoking his nervous system into fidgets; burning out the coats of his stomach with wine, logwooded and strychnined; walking with thin shoes to make the feet look delicate; the women pinched at the waist until nigh cut in two, and neither part worth anything, groaning with sick headaches and palpitations of the heart.

"Practical religion is the friend of long life in the fact that it is a protest against all the dissipations which injure and destroy the health. But you say, perhaps, 'Professors of religion have fallen; professors of religion have got drunk; professors of religion have stolen money and absconded with it.' Yes, but these so-called professors threw away their religion (if they ever had any) before they lost their morality. Again, religion is a friend of long life in the fact that it takes the worry out of your temporalities. It is not work that kills men; it is worry. When a man becomes a genuine Christian he makes over into the care of God not only his affections, but his family, his business, his reputation, his body, his mind, his soul, and everything. Religion is sunshine; that is healthy. Religion is fresh air and pure water; they are healthy. Ask all the doctors, and they will tell you that a quiet conscience and pleasant anticipations are hygienic."

If Dr. Talmage had added to his wonderful dis-

course the fact that the vital statistics of both this country and of Europe show that those who teach and practise all the Christian virtues stand at the head of the list in the matter of longevity he would have emphasized his points in his admirable sermon, against the arguments of any one, however sceptical.

Octogenarians abound among the practical Christians, and in gradually decreasing numbers they run to and over the century line, but no pope or bishop is found among the centenarians.

After this favored class in longevity there follow, in respective order, gardeners and nurserymen, farmers, graziers, and agricultural laborers, schoolmasters and lawyers, and less favored than any are members of the medical profession. The scholars, as a rule, in these statistics do not show a greater age than seventy to eighty years. The life of a scholastic lacks exercise, change of scenery, and rest of mind, factors having an important bearing on health and long life. Mechanics and artisans (except painters, who work in lead), tradesmen and merchants generally live longer lives than scholars and professional men.

Theologians and all those who practise the Christian virtues are freer from the petty vices of the day. They neither drink nor use tobacco to excess, keep good hours, take natural rest and exercise, and have, as a rule, good digestion because of temperance in eating and regularity in all habits, with minds and consciences free from the cares and trials of life.

Any other person or class of people following the same lines of daily life would be long lived as well. It is possible for any one, with close attention to the rules of comfortable living through each day of an active life, to live out the allotted time of man. There can be no doubt of this fact. Knowledge of our own physical and mental nature and the will-power to put into practice that which we have found to be the best for us from day to day solve the problem of long life, or a shorter life of regrets, remorse, and unhappiness, with the miseries of body attendant upon an ill spent life.

#### SANITARIUMS FOR INVALIDS OF ALL KINDS.

When we see the great benefits derived from a temporary residence at the mountain establishments of Professor Oertel, in Germany, for the cure of obesity, and disease of the heart that generally is a complication, especially with the middle-aged, our thought is naturally directed to our own beautiful mountain districts in the United States, where sanitariums of almost limitless numbers could be established for such diseases as consumption, obesity, diseases of the heart and digestive organs, nervous prostration, etc. It is really sad to read daily in our newspapers of the sudden demise of some of our best citizens just in the prime of life through heart-failure, when a sojourn and rest and treatment of a few months at a mountain resort would restore the

heart almost to its normal functions, and years of useful life be saved to our most valuable public men.

Consumption of the lungs can be arrested by absolute isolation and disinfection, and with the advantage of pure air in the mountain retreats the tubercle bacillus would soon find a soil uncongenial for reproduction. It would be well for each State in this Union, through its accredited authorities, the health boards, to look into this matter as of greater benefit to humanity than anything else that can engage their attention, and to lend aid to the destitute in their midst, in order that successful means of cure for consumption of the lungs and diseases of the heart can be applied at a mountain resort, where good food and pure air are the main agents in the restoration to health of this unfortunate class of people so afflicted with these heretofore considered incurable diseases of the lungs and heart. If we can prevent consumption by stamping it out, as we do our grave contagious diseases, the benefit to any community cannot be estimated in dollars and cents, and we know that isolation and disinfection, with incidental treatment, will prevent its spread.

#### WHOLESOME FOOD AND GOOD COOKING THE ESSENTIAL ELEMENTS FOR COMFORTABLE LIVING.

Mrs. Rohrer, who is one of the authorities on diet and cooking, has prepared a series of menus, which she claims to be particularly well adapted to our



needs and likes. The meals are very simple, but she claims that they contain all that is necessary for proper living. The first breakfast menu consists of grapes, wheat granules with cream, whole-wheat bread, steamed eggs, and a cup of coffee. Those who are accustomed to a heavy luncheon will probably be startled by so simple a meal as four large mellow apples, or oysters in a chafing-dish, with whole-wheat gems, or a bunch of grapes with a few Brazilian nuts, or a pint of bouillon with bread sticks, or steamed figs with cream-and-water wafers. Yet none of the luncheon menus consist of more than three, rarely more than two, dishes. The dinners are more elaborate, and consist, in one model, of vegetable soup, chopped beef with pepper-sauce, baked sweet potatoes, salad of watercresses, wafers, cheese, and *café noir*. Another dinner begins with barley broth, followed by mutton pie with brown sauce, hominy, spaghetti, with pine nuts, cheese soufflé, celery with French dressing, wafers, and black coffee. Other breakfasts are made up of such foods as warm baked apples, wheat granules with cream, an omelet, a roll, and a cup of coffee; or grapes, creamed salt cod, with a baked potato, whole-wheat rolls, and French coffee.

We can ring the changes in the menu according to the season of the year, having always in view one's own individual experience with any article of diet. As we approach old age, abstinence in eating becomes the golden rule. Fruits and vegetables, farinaceous

foods and fats, suit the aged, but meat, fish, and all highly nitrogenous foods must be partaken of sparingly; in fact, the necessity for nitrogenous foods decreases with advancing age, because the oxidation of rich albuminous food taxes the vital powers, and, without aiding in maintaining life, is really injurious.

For the middle period of life, with healthy organizations, there are no set rules, and, as before stated, one's own experience is the most effective guide, remembering always that, with this experience, temperance in eating and drinking is the passport to good health and its sequence, a long life.

"Thou owest God a death," said Prince Henry to Falstaff. The latter replied, "'Tis not due yet. I am loath to pay him before it's due."

Nature, in effect, says to man, "Learn my secrets; if you do not, I will have no pity on you, and will demand my last debt before it is due."

To live the lease of Nature is the right of man, and this, as we have seen, under the most favorable conditions should not be less than one hundred years or more, when all the vital forces should cease simultaneously, and the "going hence" becomes as natural as to fall asleep.

"The Philadelphia daily *Press*, in its issue of June 7, 1896, contained the following editorial, which in substance is aptly pertinent to our subject, and I take the liberty of copying it entire for the benefit of the readers of this book.

## “LONG LIFE AND HOW TO HAVE IT.

“Last week ex-Secretary of the Navy Thompson, of Indiana, celebrated his eighty-seventh birthday. This week he will go to the Republican National Convention at St. Louis as the head of the delegation from his State. He has been in public life for over sixty years. As far back as 1840, when the elder Harrison ran for President, Mr. Thompson was an elector on the Whig ticket, and he has participated in every national campaign since that time. He has known sixteen Presidents, and has written instructively about them and has given the public other informatory books. He is six months older than Gladstone and six years older than Bismarck, but while both those men are retired Mr. Thompson is still hale and hearty and eager to take an active part in the hurly-burly of nominating another President.

“Mr. Thompson gave the secret of his long and active life and robust health when he said the other day, ‘I never dissipated.’ He was endowed with a good constitution, but that would have quickly broken down had he not early adopted good habits of living and persevered in them all his life. This is one of the hardest lessons men have to learn, and in failing to learn it appears the chief weakness of their lifetime. Health is a certain stock of physical vitality given to every person, which can be increased or diminished according as a person lives. It might be compared to a reservoir given full to a person

at birth and capable of containing a fixed amount of water. Into this reservoir so much water runs and from it so much is drawn off each day. It is plain that if more water is taken from it than runs in, the original supply must be gradually diminished until the reservoir is empty.

“And yet a great majority of young men start out in life as if their reservoir of health was unlimited in capacity and able to respond to any drafts upon it. A dissipation here and there is apparently quickly recovered from, and a long-continued bad habit, such as overeating, seems to cause only an occasional harmful effect. Physical strength appears to be elastic and to readily spring back after each overtax with only a slight revolt. And yet every one of these overdrafts draws down the stock of health in the reservoir just so far, and if continued the reservoir is finally exhausted and then life is sustained only by the amount of vitality produced each day. This leaves a man with no reserve stock of health to withstand the attacks of disease, which are only extra calls upon the vital resources, and if the call is beyond the temporary supply of vitality life stops for lack of sustenance.

“This is the simple story of what many consider an unfathomable mystery of nature. There are cases where no human care or foresight can avail, but in a great majority of instances health and long life are the result of the application of simple rules of living, of studying one's own wants and needs

and adapting habits to them. Hear what 'Uncle Dick' Thompson says. 'For years,' he said, 'I could eat a brickbat and digest it, but that does not mean that I put indigestible food in my stomach. On the contrary, I always avoided that which I knew was hard to digest. In my several experiences in Washington life I learned that many able men with bright futures were ruined by the high living indulged in there. Their health was either impaired or they acquired bad habits which turned their careers from usefulness to dissipation. Therefore I never adopted the Washington manner of living.'

"The 'Washington manner of living' can be taken as a just term to express the manner by which the lives of hundreds of public men have either been snuffed out or the usefulness of their owners has been cut short. The same manner of living has destroyed and is destroying millions of lives to-day. Nature's laws are inexorable. She cannot be cheated. She will demand her pound of flesh, and the debt will have to be paid, even if in paying it life must be sacrificed. There is no mystery about long life. It is as simple as a sum in arithmetic, and if rightly trained any child should be able to work out the proposition."

#### GOLDEN HINTS.

I will close this volume with the following golden hints, in the main from an unknown source, but the advice is so opportune to the subject-matter that we

have been endeavoring to present to our readers, that it deserves a place as a closing admonition to any one in his journey through this life. All business men will endorse this advice, and all young men should make it a paramount object to follow it.

Have but one business occupation or profession, learn it thoroughly, and attend personally to its minutest details. Be self-reliant, always cheerful and in good humor; concentrate your energies in a determination and supreme effort to conquer success. Keep your own counsel, attend strictly to the business, occupation, or profession in which you are engaged, and never dabble in anything foreign to it; curtail your expenses within the limit of a good citizen, and never sacrifice safety to prospective large returns; cut short your expenses and losses, and let your profits run on; and make your prime movers in life industry, economy, and fair dealing. It is the merest rant and bosh to rely on luck. Luck, or that which it represents, is always indolent and whining, folding the arms in some blissful anticipation never realized, drinking and smoking while day-dreaming and waiting for big prizes in some lottery or chance speculation or expectation of news of a legacy. On the contrary, Labor and Pluck are invincible heroes who conquer success and give you health and a long life. Labor and will-power create, think, contrive, plan, and originate, look at legitimate risks, toil to surmount obstacles, push on and win renown in business life by success. The glori-

ous galaxy of successful business and professional men and illustrious authors have all been hard workers.

Shun bad company as you pass along the intricate paths of life, and when you do this you escape the prevalent vices of the day. Never loan a borrowing friend more than you are able to lose if he cannot pay. Never borrow money to speculate with. Acquire through the newspapers and journals of the day all the knowledge that relates to yourself and your fellow-man. It is only the well-educated and well-informed who successfully hold their own with the surging masses who throng the road of life.

Avoid law and legal squabbles and every such annoyance that wears out the spirit of man and shortens his life. In discussing and arranging business agreements always keep cool and never lose your temper, for that vitiates the natural secretions of the body. Make all the money you can and do all the good you can with it, remembering always that he who lives for himself alone lives for the meanest man in creation, and one that God will spurn in the judgment of men and their deeds. If engaged in business, advertise it and let your fellow-men know that you are punctual in meeting all your obligations and in dealing with every one. Be clear and explicit in making your bargains. Be civil and obliging as well as decisive and prompt, and if in commercial business never overtrade your capital. In the maturity of life, don't stop working

and let your life rust out. It is better always to wear out than rust out. Keep yourself bright by useful effort, remembering always that industry and happiness are two inseparable factors in life in promoting health and longevity. Finally, in every phase of life that meets you day by day, avoid every excess that crosses your path ; do justly, practise mercy and charity in all associations with your fellows, walk humbly before God, and, as the prophet of old said, "Length of days will be in your right hand, and in your left riches and honor."

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